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THE ROLE OF PARENTAL LOCUS OF CONTROL IN THE RELATIONS AMONG
EARLY CHILDHOOD TEMPERAMENT, PARENTING PRACTICES,
AND CHILD EXTERNALIZING BEHAVIOR

by

Amanda Kathryn Stary

A Dissertation
Submitted to the Graduate School
and the Department of Psychology
at The University of Southern Mississippi
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ABSTRACT

THE ROLE OF PARENTAL LOCUS OF CONTROL IN THE RELATIONS AMONG EARLY CHILDHOOD TEMPERAMENT, PARENTING PRACTICES, AND CHILD EXTERNALIZING BEHAVIOR

by Amanda Kathryn Stary

August 2016

Child externalizing behaviors are a common reason for children's referral for mental health services, and parenting practices are a primary target of efficacious interventions. In turn, child temperament and parent beliefs, such as parental self-efficacy and locus of control, relate to the use of specific parenting practices. The present study aimed to evaluate whether parental locus of control and related components moderate the indirect effect of preschool-aged children's temperament on their externalizing behaviors through parenting practices. Specifically, child temperament was expected to predict parenting practices only at certain levels of locus of control. Female caregivers of 146 children ages 3-5 years from southern Mississippi were recruited through preschools and daycare programs. Participants completed questionnaires measuring child temperament, child externalizing behavior, parental locus of control, parenting practices, and demographic characteristics. Conditional indirect effect analyses were conducted to examine the influence of the various moderators (i.e., parental locus of control, parental control of child's behavior, and parental self-efficacy) on the indirect effect of each aspect of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through parenting practices (i.e., positive, negative). Results supported an indirect effect of child extraversion/surgency on child

externalizing behavior through negative parenting, conditional on parental self-efficacy. Results also revealed that both parental locus of control and parental self-efficacy moderated the relation between child effortful control and positive parenting practices, but results were less clear on the extent to which this moderating influence extended to the influence of positive parenting on child externalizing behaviors. The findings suggest the importance of targeting different aspects of parental beliefs dependent upon certain aspects of their child's temperament when attempting to prevent child externalizing behaviors.

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TABLE OF CONTENTS

ABSTRACT	ii
ACKNOWLEDGMENTS	iv
LIST OF TABLES	viii
LIST OF ILLUSTRATIONS	xi
CHAPTER I - INTRODUCTION	1
Theories of Child Development.....	2
Temperament Theory.....	4
Temperament as a Predictor of Child Externalizing Behavior	8
Parenting Behavior as it Relates to Child Temperament and Externalizing Behavior ...	9
The Indirect Effect of Temperament on Child Externalizing Behavior through Parenting	14
Locus of Control Applied to Parenting	16
Parental Locus of Control as a Moderator	18
Summary and Current Study	22
Hypotheses	23
CHAPTER II - METHOD	27
Participants.....	27
Measures	30
Children's Behavior Questionnaire.....	30

Parental Locus of Control Scale	31
Alabama Parenting Questionnaire – Preschool Revision	33
Eyberg Child Behavior Inventory	34
Demographic Form	35
Procedure	35
CHAPTER III - RESULTS.....	38
Preliminary Analyses	38
Descriptive Data on Variables of Interest	40
Data Analytic Model.....	43
Zero-order Correlations	43
Hypothesis 1.....	43
Hypothesis 2.....	45
Statistical Analyses for Hypotheses 3-8	45
Results of Preliminary Mediation Analyses for Hypotheses 3-5.....	47
Moderated-mediation analyses for Hypothesis 3 (PLOC).....	50
Moderated-mediation analyses for Hypothesis 4 (Parental Control of Child’s Behavior; PCCB)	50
Moderated-mediation analyses for Hypothesis 5 (Parental Self-efficacy)	51
Results of Preliminary Mediation Analyses for Hypotheses 6-8.....	52
Moderated-mediation analyses for Hypothesis 6 (PLOC).....	55

Moderated-mediation analyses for Hypothesis 7 (Parental Control of Child's Behavior).....	57
Moderated-mediation analyses for Hypothesis 8 (Parental Self-efficacy)	58
CHAPTER IV – DISCUSSION.....	60
Limitations and Directions for Future Research	66
Conclusions.....	69
APPENDIX A – Demographic Form.....	71
APPENDIX B – IRB Approval Letter	75
APPENDIX C – Parent Informed Consent Form	76
APPENDIX D – Tables of Nonsignificant Moderated-Mediation Results	78
REFERENCES	85

LIST OF TABLES

Table 1 Target Children Characteristics by Completion Method	28
Table 2 Descriptive Characteristics of Caregivers.....	29
Table 3 Nonsignificant Comparisons for Outcome Variables between Head Start and Other Preschools	40
Table 4 Descriptive Results for Variables of Interest.....	41
Table 5	42
Bivariate Correlations between Demographic Variables and Outcome Variables	42
Table 6 Bivariate Correlations among Variables of Interest	44
Table 7 Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Self- efficacy.....	52
Table 8 Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Positive Parenting at Different Levels of Total Locus of Control	56
Table A1. Conditional Indirect Effects of Negative Affectivity on Child Externalizing Behavior through Negative Parenting at Different Levels of Total Parental Locus of Control	78
Table A2. Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Negative Parenting at Different Levels of Total Parental Locus of Control	78
Table A3. Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Negative Parenting at Different Levels of Total Parental Locus of Control	79

Table A4. Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Control of Child's Behavior.....	79
Table A5. Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Control of Child's Behavior.....	80
Table A6. Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Control of Child's Behavior	80
Table A7. Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Self-efficacy.....	81
Table A8. Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Self-efficacy	81
Table A9. Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Positive Parenting at Different Levels of Total Locus of Control	81
Table A10. Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Positive Parenting at Different Levels of Total Locus of Control	82
Table A11. Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Control of Child's Behavior.....	82

Table A12. Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Control of Child's Behavior.....	83
Table A13. Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Control of Child's Behavior.....	83
Table A14. Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Self-efficacy.....	84
Table A15. Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Self-efficacy.....	84
Table A16. Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Self-efficacy.....	84

LIST OF ILLUSTRATIONS

<i>Figure 1.</i> Indirect effects of child temperament factors on child externalizing behaviors through negative parenting practices.	49
<i>Figure 2.</i> The Moderating Influence of Parental Self-efficacy on the Relation between Child Extraversion/Surgency and Negative Parenting Practices.	53
<i>Figure 3.</i> Indirect effects of child temperament factors on child externalizing behaviors through positive parenting practices.	54
<i>Figure 4.</i> The moderating influence of PLOC on the relation between child effortful control and positive parenting practices.	56
<i>Figure 5.</i> The moderating influence of parental self-efficacy on the relation between child effortful control and positive parenting practices.	59

CHAPTER I - INTRODUCTION

Externalizing behaviors, including aggression, noncompliance, hyperactivity, and impulsivity, are among the most common reasons children are referred to mental health professionals (McMahon, Wells, & Kotler, 2006). Parenting is one factor that is consistently predictive of child outcomes, including child externalizing behaviors (e.g., Frick, Christian, & Wootton, 1999; Gryczkowski, Jordan, & Mercer, 2010; Loeber & Stouthamer-Loeber, 1986). Thus, parenting has been an important focus of intervention for child externalizing behaviors (Eyberg, Nelson, & Boggs, 2008).

Difficult temperament among young children has also been found to be strongly related to more child externalizing behaviors (e.g., Lanza & Drabick, 2011; Olson, Schilling, & Bates, 1999; Rothbart, Ahadi, Hershey, & Fisher, 2001), and associated with more inconsistent and punitive parenting and less positive parenting (e.g., Evans, Nelson, Porter, Nelson, & Hart, 2012; Janssens, 1994; Koenig, Barry & Kochanska, 2010). However, there are other studies that have shown no relationship between certain dimensions of temperament and parenting practices (e.g., Lengua & Kovacs, 2005; Planalp, Braungart-Rieker, Lickenbrock, & Zentall, 2013); thus, it is important to examine potential moderators of this association.

Parental characteristics, including parent beliefs, have also been identified as playing an important role in child outcomes (Bell, 1979; Bugental, Shennum, & Shaver, 1984). Parents' locus of control regarding parenting may be important beliefs to examine. Individuals with low internal general locus of control tend to be more reactive to difficult situations in that they experience more learned helplessness (Bugental et al., 1984), and the resulting deterioration of performance and lack of persistence on tasks

(Dweck & Reppucci, 1973; Gregory, Chartier, & Wright, 1979). Thus, parents with low internal locus of control, whether general or specific to parenting, may perceive certain temperamental characteristics of the child as difficult and challenging, which may then contribute to problematic changes in their parenting practices (i.e., more negative, less positive parenting strategies). Thus, this study evaluated whether the indirect effect of certain child temperament characteristics on externalizing behaviors through parenting practices differed dependent on certain aspects of parental locus of control (PLOC). Specifically, we examined whether a more internal locus of control attenuated the relation between child temperament and parenting practices.

Theories of Child Development

Researchers who take an ecological perspective view multiple factors, including child and parent characteristics, as influential in child developmental outcomes (e.g., Bronfenbrenner, 1986). The transactionist view of child development recognizes that individuals are changed by their interactions with others (Sameroff, 2009). Thus, children are thought to influence their environment over time, and the environment consequently influences children and their development (Bell, 1979; Sameroff, 2009). Biology has been viewed as an important influence on child behavior that elicits certain reactions from parents, in turn influencing the socializing environment of children (Bugental et al., 1984). Children's temperament has largely been viewed as innate; however, researchers have also conceptualized temperament as a factor that interacts over time with the environment in which the child is socialized (Rothbart & Derryberry, 1981).

Parenting behavior is often thought to be an important aspect of the socializing environment of children (e.g., Belsky, 1984; Poehlmann et al., 2012) that may interact with child temperament. Also, belief systems of the parent can be important filters in the interactions between child and parent (Bugental et al., 1984). Thus, when evaluating child outcomes, such as child externalizing behaviors, it is important to evaluate how children's biological makeup may influence their parents' behavior, and how parents' beliefs influence the perception of their children's characteristics and, consequently, influence their own behavior.

When considering reciprocal influences between parent and child, Bell (1979) has suggested that it is important to consider the parent as a "thinking parent" (p. 821). Thus, Bell (1979) emphasizes the importance of studying the role of parental attitudes within the sequence of parent and child reciprocal behaviors that lead to later behavioral change in children. Control theory suggests that parents do not have a fixed set of discipline techniques that never change, but rather, parents change their techniques dependent upon whether or not their child's behavior meets their expectations (Bell, 1979). Thus, Bell's (1979) theory suggests that parents' perceptions and cognitions have an important role in their subsequent parenting behavior. Goodnow (1985) indicates that two important parent beliefs related to children's developmental outcomes are parents' perceptions of how much influence they have over their children's behaviors and characteristics and parents' perceived responsibility to influence such behaviors and characteristics. She also suggests that perceived responsibility may be closely related to parents' perceptions of their competence in the parenting role. These concepts are reflective of the constructs of parental locus of control and its components.

Locus of control has been defined as the degree to which one sees a reward as being a result of individuals' own behavior as compared to seeing it as controlled by other forces and occurring unrelated to their own actions (Rotter, 1966). With parents, this can be described as the degree to which they see their child's behavior as resulting from their own parenting as opposed to being controlled by the child or outside forces. The present study focused on parental locus of control as a specific type of parent belief or cognition that may impact parenting practices.

To conclude, the influence of parent and child characteristics on child outcomes is viewed by many in the field as a transactional process. Child behavior and characteristics are thought to influence parent behavior and characteristics which sequentially influence children's characteristics and behavior. Additionally, parents' beliefs and cognitions are thought to have an important influence on these transactions. Thus, the present study evaluated the potential moderating impact of parental locus of control and related components on the relation between child temperament and parenting practices.

Temperament Theory

Child temperament is one of many child characteristics thought to impact child developmental outcomes, including child externalizing behaviors. There are multiple different conceptualizations of temperament. Thomas and Chess (1977) identified three different groups of certain temperament characteristics: 1) *easy*, characterized by regularity, positive approach to new stimuli, adaptability, and positive mood; 2) *difficult*, characterized by withdrawal in response to new stimuli, irregularity, lack of adaptability, and negative mood; and 3) *slow-to-warm-up*, characterized by initial mild negative

responses to stimuli, followed by gradual adaptation to the new stimuli after repeated exposure.

Although many studies discuss the difficult temperament originally proposed by Thomas and Chess (1977), this conceptualization of temperament has its flaws (Rothbart, Posner, & Hershey, 1995). One of the problems with their theory is the variability in definitions of the construct across studies, causing problems in knowing what is meant by difficult in any particular study. For example, some studies delete rhythmicity from the difficult factor, resulting in a different operationalization of the construct (Rothbart et al., 1995). Thus, Rothbart and colleagues (1995) emphasize the importance of using assessments of the construct that have support for their psychometric properties and can be compared across studies. The present study intended to expand past the concept of difficult temperament and evaluated those specific domains of temperament that are related to certain parenting practices.

Rothbart's (1981) model conceptualizes temperament as "individual differences in reactivity and self-regulation" (p. 37) that have a substantially biological basis. Within this conceptualization of temperament, *reactivity* is defined as physiological responses to environmental events, and *self-regulation* is defined as those approach and avoidance behaviors used to moderate this physiological reactivity. Consistent with broad personality dimensions identified in adults, Rothbart and colleagues (2001) conceptualize temperament as consisting of three primary dimensions: negative affectivity, extraversion/surgency, and effortful control. Each of these dimensions is multidimensional and consists of both distinct and, to some extent, overlapping aspects, such as positive anticipation. Negative Affectivity includes distress related to sensory

stimulation (e.g., intensity of light), sadness (i.e., lowered mood and energy), fear, anger/frustration, and low soothability (i.e., difficulty recovering from distress).

Extraversion/Surgency includes quick responses to stimuli, a tendency to enjoy situations with high intensity and complexity, more gross motor activity, and more comfort and tendency to approach others in social situations. Effortful Control includes obtaining enjoyment from situations that involve low intensity, novelty, and complexity; smiling and laughter; the ability to inhibit a response; detection of subtle stimuli in the environment; and the tendency to maintain attentional focus on a task.

Rothbart and Derryberry (1981) conceptualize temperament as a construct that is relatively stable over time, but that also changes over time as a result of development and experience. Akker, Dekovic, Prinzie, and Asscher (2010) further suggest that children's experience of differences in parenting may be one of the mechanisms in the environment that influences their temperament. A study of child inhibition provided evidence for an influence of child inhibition on parental behavior (e.g., encouraging or discouraging withdrawal from, or encouraging approach to stimuli); however, there was a less consistent pattern of the influence of parental behavior on child inhibition, suggesting more stability in this temperamental construct (Belsky, Rha, & Park, 2000). Effortful control, an aspect of temperament, appears to emerge toward the end of the first year and continues to develop into early childhood and remains relatively stable, but is also influenced by environmental factors such as parenting behaviors (Kochanska, Murray, & Harlan, 2000). Thus, there is evidence for overall stability of temperament, but it is also somewhat malleable over time. Additionally, early childhood appears to be an important period of time to examine temperament, as it is still developing at that time.

The preschool years (ages 3-5) may be an important timeframe in which to examine temperament and related constructs, as some aspects of temperament appear to be still developing during this time period (Buss & Plomin, 1975; Posner & Rothbart, 1998). Specifically, there is evidence that executive control, related to the initiation and inhibition of responses, changes drastically during the third year of life (Posner & Rothbart, 1998) and corresponds with changes in learning to delay gratification and control affect (Buss & Plomin, 1975). Posner and Rothbart (1998) also found that children ages 40-42 months had accuracy on an executive control task that was no better than chance; however, children age 44 months had almost perfect performance on the task. There is also evidence that the temperamental dimension of irritability does not become more stable until after three years of age (Buss & Plomin, 1975). Thus, outcomes from studies on the affect domain of temperament may be different depending on whether the child is an infant than when the child is of preschool age, since irritability is more variable in infancy. Evidence that temperamental domains undergo developmental change over the lifespan highlight the importance of evaluating such temperamental factors at different points in child development.

To conclude, multiple definitions of the dimensions of temperament are reported throughout the literature; however, the theory that is the focus of the present study is that of Rothbart and Derryberry (1981). This theory views temperament as having three primary dimensions and purports changes over time (Rothbart & Derryberry, 1981). Lastly, given the evidence for the continuing development of temperament in the early childhood years, the present study focuses on examination of temperament in preschool-age children.

Temperament as a Predictor of Child Externalizing Behavior

There is evidence that certain dimensions of children's temperament are antecedents to later externalizing behavior (Bates, 1989; Campbell, Shaw, & Gilliom, 2000; Caspi, Henry, McGee, Moffitt, & Silva, 1995; Guerin, Gottfried, Oliver, & Thomas, 2003; Lengua & Kovacs, 2005). Specifically, less effortful control and more impulsivity (a component of extraversion/surgency) in children are related to high levels of child externalizing behaviors (e.g., Lanza & Drabick, 2011; Olson et al., 1999). One study showed that both extraversion/surgency and negative affectivity predicted aggression in children (Rothbart et al., 2001). Lengua and Kovacs (2005) found that the child temperament dimension of irritability significantly predicted future externalizing behaviors in school-aged children. Other studies have shown that specific difficult temperamental dimensions such as high intensity, low approach, and low adaptability are related to externalizing behaviors in preschool-age children (Earls & Jung, 1987; Fagan, 1990). Connecting these results to Rothbart's conceptualization of temperament, it would be expected that more Negative Affectivity (which contains anger/frustration), Extraversion/Surgency (which includes high intensity pleasure and shyness), and less Effortful Control may also be related to more externalizing behaviors in children.

Caspi et al. (1995) evaluated data from a longitudinal study using a slightly different conceptualization of temperament. They found that young children ages 3 to 5 years with a temperament characterized by impulsivity, negative affectivity, and short attention span displayed more externalizing behaviors in late childhood and adolescence. Similarly, Akker and colleagues (2010) found that toddlers with a more expressive temperamental profile (i.e., more active and anger-prone) tended to have more

externalizing behaviors than toddlers with a more fearful or typical (i.e., moderate in fear, activity level, and anger proneness) temperamental profile. Gibbins (2001) also found that difficult temperament (i.e., less predictability, more fussiness, less adaptability, and “dullness”; p. 54) was predictive of more child externalizing behaviors. Finally, while there is a strong correlation between temperament and behavior problems (Lemery, 1999), Lemery, Essex, and Smider (2002) were able to show that the strength of the associations between temperament dimensions and externalizing behaviors did not change when confounding items were removed, providing evidence that the measure of temperament and the measure of problem behavior are measuring different constructs.

In conclusion, many dimensions of temperament have been shown to be predictive of child externalizing behaviors even when considering the overlap in measurement of these constructs. Given the importance of child temperament to child externalizing behaviors, it is important to evaluate what factors might mediate or moderate the influence of child temperament on child externalizing behaviors.

Parenting Behavior as it Relates to Child Temperament and Externalizing Behavior

As previously mentioned, parenting practices are influential in children’s developmental outcomes, including child externalizing behavior. Patterson (1982) suggests that family members or parents may train children to use externalizing behaviors, such as antisocial behavior, through negative reinforcement of children’s coercive behavior (which is often externalizing in nature) in their daily interactions. In addition, he suggests that children use coercive behavior to escape aversive behaviors of their family members, with more coercive behavior on the part of the child leading to

withdrawal of such aversive behaviors, including threats of punishment but not following through (i.e., inconsistent parenting).

There is evidence to support the proposed link between certain parenting behaviors and child externalizing behaviors. For example, overall negative parenting practices, including inconsistent discipline and punitive parenting, have been found to relate to more child aggression, inattention, and hyperactivity/impulsivity, but only for those children who are high in negative affectivity (Pinard, 2007). Additionally, parents' inconsistency in their discipline, specifically, is predictive of children's externalizing behaviors both concurrently (e.g., Gryczkowski et al., 2010), and longitudinally (e.g., Lengua & Kovacs, 2005). Additionally, harsh parenting has been predictive of later aggression in children (Haskett & Willoughby, 2007) and more positive parenting has been linked to fewer child externalizing behaviors (e.g., Gryczkowski et al., 2010).

Parenting may be a mechanism through which child temperament influences child externalizing behaviors. Temperament is thought to be an influential factor on parenting practices (Belsky, 1984). Children with easy temperaments may prompt more positive parenting from their parents, while children with more difficult temperaments may be difficult to handle and, thus, may prompt more negative parenting from their parents (Akker et al., 2010). Many studies have supported this proposed influence of the child temperament dimensions of negative affectivity, extraversion/surgency, and effortful control on parenting.

There is substantial evidence that components of child negative affectivity are related to more hostile/punitive, more inconsistent, and less positive parenting (e.g., Clark, Kochanska, & Ready, 2000; Gibbins, 2001; Janssens, 1994). For example,

children with more negative mood tend to have parents who use more authoritarian parenting (Janssens, 1994). Similarly, Clark and colleagues (2000) found that infants' negative affectivity predicted mothers' later forcefulness in their discipline months later. Additionally, fussier toddlers tended to have parents who used more hostile (i.e., coercive) parenting (Gibbins, 2001). With regards to inconsistent parenting, fussier children tend to have parents who are less consistent in their parenting (Gibbins, 2001). Also, child temperamental irritability is related to parents' more inconsistent parenting both concurrently and in the future (Lengua, 2006; Lengua & Kovacs, 2005). Irritability is also related to more rejection from parents concurrently, but not to changes in rejection from parents over time (Lengua, 2006). It is important to note that in this study, initial levels of inconsistent discipline were not predictive of changes in irritability, providing evidence for a directional influence from child temperamental irritability to parents' inconsistent discipline (Lengua, 2006). The results for child fearfulness are somewhat mixed, with evidence that child fearfulness is predictive of more inconsistent parenting at the same time point (Lengua, 2006; Lengua & Kovacs, 2005), whereas child fearfulness was predictive of less inconsistent parenting over time (Lengua, 2006). Regarding positive parenting, young child temperament characterized by more anger is predictive of less positive parenting (Akker et al., 2010; Gibbins, 2001; Koenig et al., 2010). There is also evidence that the child's anger-proneness precedes decreases in positive parenting (Akker et al., 2010; Koenig et al., 2010). However, studies have also identified a lack of relation between child negative affectivity and parents' caregiving/sensitivity (Planalp et al., 2013). This lack of relation between negative affectivity and parenting in this study

suggests the importance of examining moderating factors of the relation between child temperament and parenting.

There is also evidence that components of child extraversion/surgency are related to certain parenting practices (e.g., Gibbins, 2001; Janssens, 1994; Planalp et al., 2013). For example, infant surgency has been related to an increase in mothers' caregiving (i.e., feeding, bathing, soothing) over time (Planalp et al., 2013). Similarly, results of this same study showed that mothers of children higher in surgency played more with their children but did not respond as appropriately to their child's behavior (i.e., sensitivity).

Interestingly, these relations were not found with fathers. In the case of hostile/punitive parenting, specifically, children with a higher activity level tend to have parents who use more authoritarian parenting (Janssens, 1994). Regarding inconsistent parenting, children who are less predictable tend to have parents who are less consistent in their parenting (Gibbins, 2001). With positive parenting, there is evidence that as children become less active, their parents use more positive parenting (Akker et al., 2010).

Components of child effortful control also appear to be related to certain parenting characteristics and practices (e.g., Gibbins, 2001; Spinrad et al., 2012; Webster-Stratton & Eyberg, 1982). Regarding general parenting, mothers who had young children with short attention spans were more likely to display negative affect when interacting with their children, to show frustration, ignore their children more, and to submit more to their children when interacting with them (Webster-Stratton & Eyberg, 1982). In this same study, the more uninhibited these young children were the less likely their mothers were to display positive affect when interacting with the child. Similarly, toddlers who were more predictable tended to have more quality interactions with their parents, such as

more verbal and physical involvement, better responsiveness, and more positive affect on the part of the parent (Gibbins, 2001). Additionally, higher initial levels of effortful control have been predictive of moderate decreases in parental rejection (Lengua, 2006). Less effortful control in infants and young children has also been predictive of more maternal sensitivity when the children are older (Spinrad et al., 2012; van der Voort, Linting, Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2013). Van der Voort et al. (2013) suggested that children without the ability to control their behavior may elicit more sensitive parenting because they need more guidance than children who are able to control their behavior. There is also evidence of a bidirectional relation between child effortful control and maternal sensitivity as parenting of young children has been found to predict children's effortful control one year later (Spinrad et al., 2012). When it comes to positive parenting, young child temperament characterized by more predictability is predictive of more positive parenting (Akker et al., 2010; Gibbins, 2001; Koenig et al., 2010). However, with inconsistent parenting, one study in school-aged children found that child effortful control was not related to changes in inconsistent discipline over time (Lengua, 2006). Similarly, Planalp and colleagues (2013) did not find a significant relation between child regulation and parents' caregiving and sensitivity. This occasional finding of no relation between child temperament and parenting suggests the importance of identifying potential moderators of the relation between child temperament and parenting.

There is a consistent connection between child temperament and the use of certain parenting practices and techniques. However, there are some cases in which certain dimensions of temperament were found to be unrelated to certain parenting practices

(Planalp et al., 2013), emphasizing the importance of evaluating potential moderators of this relation. Thus, child temperament appears to be predictive of certain parenting practices and styles but the relation between child temperament and parenting practices may vary depending upon which dimensions of temperament and which parenting behaviors are under examination.

The Indirect Effect of Temperament on Child Externalizing Behavior through Parenting

Some studies have taken the next step and examined parenting styles and parenting behaviors as mediators of the relation between child temperament and child externalizing behavior (e.g., Gibbins, 2001; Paulussen-Hoogeboom, Stams, Hermanns, Peetsma, & van den Wittenboer, 2008). In a study of Dutch parents and their children, an authoritative parenting style, characterized by warmth, firmness, and reasoning, significantly mediated between child negative emotionality and child externalizing behavior, with more negative emotionality related to less authoritative parenting and less authoritative parenting related to more child externalizing behavior (Paulussen-Hoogeboom et al., 2008). These significant indirect effects remained even after accounting for overlap in the measurement of child temperament and behavior. However, in this same study, an authoritarian parenting style was not significantly related to child externalizing behavior and, thus, was not examined as a mediator.

Regarding more specific parenting behaviors, Gibbins (2001) found that hostile parenting significantly mediated the relation between young children's difficult temperament (i.e., less adaptable, less predictable, and fussier) and parent-reported externalizing behaviors, with more difficult temperament predictive of more hostile parenting, and more hostile parenting related to more child externalizing behavior.

However, positive parenting and consistent parenting did not mediate between children's difficult temperament and parent-reported externalizing behaviors. The authors suggest that the hostile parenting aspect may be more important to child externalizing behaviors as parents are modeling more aggressive and coercive behaviors to their children. Another possibility may be that there is a moderating variable that impacts in which situations parenting practices might mediate between child temperament and child externalizing behavior.

Although not testing mediation directly, Lengua (2006) examined the influence of child temperament and parenting on children's externalizing behaviors in conditional growth models. Increases in children's fear were moderately related to more child externalizing behaviors above the effects of both inconsistent parenting and parental rejection (Lengua, 2006). Additionally, children's increases in irritability over time were moderately related to more externalizing behaviors when tested with parental rejection, but was not related to externalizing behaviors when inconsistent discipline was included in the model (Lengua, 2006). Lastly, increases in effortful control over time were related to fewer child externalizing behaviors later in childhood above and beyond the effects of parental rejection (Lengua, 2006). However, the opposite was also true; increases in parental rejection over time predicted externalizing behaviors above the influence of child effortful control (Lengua, 2006). The influence of increases in effortful control on child externalizing behavior was also modest when including parental inconsistency in the model (Lengua, 2006).

However, other study findings are inconsistent with the theory that parenting is a mechanism through which child temperament influences child externalizing behaviors.

Less effortful control and less support and structure provided by mothers was found to be concurrently predictive of higher levels of delinquency in adolescence (van der Voort et al., 2013); however, infant and childhood effortful control was not indirectly related to aggressive behavior nor delinquency in adolescence through maternal support and structure. Similarly, in a sample of young children, parent-child interaction quality did not mediate the relation between child difficult temperament and child externalizing behavior (Gibbins, 2001). To conclude, there are some initial findings that support an indirect effect of child temperament on child externalizing behaviors through parenting. However, a few studies did not support this hypothesis. Thus, it is important to evaluate potential moderators of this model.

Locus of Control Applied to Parenting

Locus of control (LOC) seems to be a particularly important parent belief to examine in relation to parenting practices. Rotter (1966) conceptualized general LOC as a unidimensional construct that ranging from internal to external. Thus, individuals who believe that an event is a result of his or her own behavior are said to have a more internal LOC and those who see events as a result of forces outside themselves are said to have a more external LOC (Rotter, 1966). Levenson (1981) separates external LOC into two types: control that is attributed to fate or chance and control attributed to powerful others. Levenson (1981) explains that one type infers order and predictability to the world (i.e., control of powerful others), whereas the other type infers that events are random and unpredictable (i.e., chance control). Given this theoretical difference, there may also be differences in the relation between these two types of external LOC and other variables.

The general concept of LOC has been evaluated in relation to persistence on tasks. Bandura (1977) suggests that people may not persist in a task for one of two reasons: 1) because they do not believe that they are able to do it, or 2) because they believe that they have the needed abilities to perform a task, but they do not persist because they think that regardless of what they do, they will not obtain the desired result from the environment. Both reasons for not persisting would be due to a more external or less internal LOC.

Relating this concept of locus of control and persistence to parenting, parents may not persist in effective parenting because they perceive that they do not have effective parenting skills or because they believe they have the needed skills but their particular child may not respond to such parenting in the way the parent desires. Similarly, Janssens (1994) has suggested that some parents may believe that their child's developmental outcomes are due to the child's inborn qualities and that their parenting practices have little to no influence on their child's development (i.e., external LOC).

The present study focuses on this concept of LOC as it relates to the parenting role (i.e., parental locus of control, PLOC). Campis, Lyman, and Prentice-Dunn (1986) developed a measure of locus of control specific to the parenting role. Factor analysis of the items yielded a five-factor structure: 1) Parental Efficacy, the parents' perceptions of their effectiveness in the parenting role; 2) Parental Responsibility, parents' feelings of responsibility for their child's behavior; 3) Child Control of Parents' Life, parents' perceptions that their lives are dominated by their child's needs; 4) Parental Belief in Fate/Chance, parents' beliefs that fate and chance influence their parenting and their child's behavior; and 5) Parental Control of Child's Behavior (PCCB), parents' feelings

of control over their child's behavior (Campis et al., 1986). When examining the items on the scale more closely, the scales that appear to best fit the aims of the study are the Parental Efficacy and PCCB scales. The Parental Efficacy scale has items that measure general attitudes about the impact of one's parenting on child behavior and the items on the PCCB scale are related to parents' beliefs specific to their abilities to influence their own child's behavior. The Parental Responsibility scale was not included because it has more impersonal items related to parents' beliefs about what parents in general should do (Hagekull, Bohlin, & Hammarberg, 2001). Also, Hagekull and colleagues (2001) found that parental responsibility was not related to children's outcomes (i.e., aggressiveness, concentration, and internalizing problems), whereas mothers' perceptions of control were significantly related to their child's aggressiveness and concentration difficulties. This result suggests that PCCB may be a more important scale to use when looking at externalizing behaviors in children than the Parental Responsibility scale.

Parental Locus of Control as a Moderator

Bugental and colleagues (1984) suggest that if parents have more external PLOC, thus feeling that they are "victims of uncontrollable events," they may be less effective as "socialization agents" for their children (p. 7). Specifically, Bugental and colleagues (1984) suggest that parents who perceive their child to have a difficult temperament and who have more of an external PLOC may use more controlling and punitive parenting practices. Janssens (1994) explains that parents with external LOC may "try to cling with desperate tenacity to their power" (p. 487), resulting in more authoritarian or punitive parenting.

Empirical evidence supports an interaction between child temperament and parental locus of control. Janssens (1994) found that PLOC interacted with older child temperament in predicting parents' use of authoritarian techniques such as punishment, threatening, and "verbal force" (p. 494), with those parents with a more external (i.e., less internal) locus of control using more authoritarian techniques with children perceived to be more externalizing in their temperament (i.e., overactive, intense behavior and tendency toward negative mood). This relation did not exist for those parents with a high internal (i.e., less external) PLOC.

Similarly, there is empirical evidence that parents' perceptions of control of their child interact with the characteristics of their child to influence parenting. Bugental and Happaney (2004) found that mothers' perceived control interacted with the at-risk status (i.e., premature, low Apgar score) of their infant to influence maternal use of harsh physical parenting one year later, with mothers' who perceived themselves to have less control and whose infant was identified as at-risk using more harsh parenting than those mothers with more perceived control. Martorell and Bugental (2006) also found that parents who perceived their toddler to have a difficult temperament (i.e., higher activity level, tendency toward anger, low tendency to express pleasure) tended to use more physically harsh parenting. This relation did not exist for children with easier temperaments. Although there are no known studies that look at the moderating influence of parental self-efficacy in the relation of child characteristics and punitive parenting, there is evidence that parents with less parental self-efficacy tend to use more punishment with their elementary school-aged children (Kokkinos & Panayiotou, 2007).

In addition to using more punitive parenting, parents who perceive their child to have a difficult temperament and who have more of an external (i.e., less of an internal) PLOC might be expected to use effective parenting techniques less frequently because they feel as though nothing they do will work (Janssens, 1994), possibly resulting in less positive and more inconsistent parenting. There is some initial evidence that PLOC and its components are related to the use of positive parenting and consistency in parenting. For example, parents with less internal PLOC tend to be more inconsistent in their parenting of their school-aged children (Kokkinos & Panayiotou, 2007). Also, greater parental self-efficacy in mothers was related to more observed parenting competence with infants in the combined domains of warmth, sensitivity, engagement, low anger, and low flatness of affect, even after controlling for perceived infant temperament, which was negatively related to parental self-efficacy (Teti & Gelfand, 1991). Although studies have shown a relation between parental self-efficacy and parenting behavior, one study found no relation between both self-reported parental self-efficacy and parenting quality (i.e., involvement and presence as a secure base) observed in structured parent-child interactions (Coleman & Karraker, 2003). So, although other studies provide evidence that PLOC and its components are related to parenting practices, the occasional lack of a relation suggests that it may be valuable to examine which factors might interact with PLOC and related components to influence parenting practices.

There is some initial evidence for the moderating influence, specifically, of components of PLOC on the relation between child temperament and more positive aspects of parenting. Leerkes and Crockenberg (2002) found that mothers tended to be less sensitive when their infants were distressed only when their self-efficacy was low.

However, when mothers' self-efficacy was moderately high, infant distress was moderately positively related to mothers' sensitivity. Interestingly, when mothers had high self-efficacy, mothers tended to be less sensitive with their distressed infants than mothers who had moderately-high self-efficacy. Thus, evaluating the potential moderating impact of PLOC and its related components on the relation between child temperament and parenting practices appears to be an important avenue for research.

These studies suggest that PLOC, including parental self-efficacy and parents' perceptions of control of their child's behavior, interact with child temperament to influence parenting behavior. However, existing studies have only looked at infants, toddlers, and elementary-aged children. Few, if any, studies have looked to see if this interaction between child temperament and PLOC exists with preschool-aged children. Another limitation of the studies described here have evaluated the interaction of child temperament and PLOC on the quality of the parenting and on punitive parenting behaviors, such as punishment and threatening; however, no known studies have evaluated whether PLOC moderates the influence of child temperament on inconsistent parenting behaviors and positive parenting behaviors, despite the evidence that certain dimensions of child temperament differentially predict these two types of parenting behaviors. However, there is theoretical support for PLOC as a moderator of these relations, as Bugental et al. (1984) proposed that those parents with a more external (i.e., less internal) locus of control may be more susceptible to learned helplessness when faced with a difficult situation, such as children high in negative affectivity and activity level. Thus, they may feel like nothing they do will work, which may result in fewer

positive parenting practices and less consistent implementation of consequences (i.e., inconsistent parenting).

Summary and Current Study

Child temperament has been found to be predictive of both parenting practices (e.g., Gibbins, 2001; Lengua, 2006; Lengua & Kovacs, 2005) and child externalizing behaviors (e.g., Campbell et al., 2000; Caspi et al., 1995; Guerin et al., 2003).

Additionally, parenting practices and styles are significantly related to child externalizing behaviors (e.g., Pinard, 2007) and there is some evidence that parenting may act as a mediator between certain dimensions of children's temperament and their externalizing behavior (e.g., Gibbins, 2001; Paulussen-Hoogeboom et al., 2008).

Additionally, there is some initial evidence with infants and older children that parental beliefs, such as PLOC, moderate this relation, such that the relation between temperament and authoritarian parenting is only true for those parents with a more external locus of control relative to parents with more internal locus of control. However, this has yet to be studied in preschool children. Additionally, PLOC has been found to moderate the relation between certain aspects of children's temperament and authoritarian or punitive parenting, but no studies were found that examined whether PLOC moderates the relation between children's temperament and either inconsistent parenting or positive parenting practices, despite the variability in temperament's prediction of these types of parenting practices. Also, no known studies have examined parental beliefs such as PLOC or its components (i.e., parental self-efficacy, PCCB) as moderators of the indirect effect of child temperament on child externalizing behavior through parenting.

Given that more negative mood/anger, high activity level, and impulsivity or a lack of regulatory behavior are aspects of child temperament that differentially relate to parenting practices (Janssens, 1994; Koenig et al., 2010, Kokkinos & Panayiotou, 2007), Rothbart's constructs of negative affectivity (which includes anger), extraversion/surgency (which includes activity level), and effortful control were the aspects of temperament examined in the present study. The present study sought to evaluate whether punitive parenting, inconsistent parenting, and positive parenting mediate the relation between child difficult temperament, characterized by more negative affectivity and extraversion/surgency and less effortful control, and child externalizing behavior. Additionally, PLOC and two of its components, parental self-efficacy and PCCB were evaluated as moderators of this indirect effect in a sample of maternal caregivers of preschool-aged children.

It was expected that increasing child negative affectivity and extraversion/surgency and decreasing effortful control would be related to more child externalizing behaviors, as well as more punitive and inconsistent parenting practices, and fewer positive parenting practices. When parents have a more internal locus of control, more parental self-efficacy, or more perceptions of control in the parenting role, weakening of these relations was expected.

Hypotheses

1. The child temperament factors of negative affectivity and extraversion/surgency positively relate to negative parenting (i.e., punitive, inconsistent) and inversely relate to positive parenting. The child temperament

dimension of effortful control inversely relates to negative parenting (i.e., punitive, inconsistent) and positively relates to positive parenting.

2. The child temperament factors of negative affectivity and extraversion/surgency positively relate to child externalizing behaviors and the child temperament factor of effortful control inversely relates to child externalizing behaviors.
3. The indirect effect of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through negative parenting (i.e., punitive, inconsistent) is conditional on PLOC, such that a more internal locus of control attenuates the relation between child temperament and negative parenting. Thus, the indirect effect is significant for female caregivers with a more external locus of control, but not those female caregivers with a more internal locus of control.
4. The indirect effect of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through negative parenting (i.e., punitive, inconsistent) is conditional on parents' perceptions of control of their child's behavior, such that perceptions of greater control attenuate the relation between child temperament and negative parenting. Thus, the indirect effect is significant for female caregivers who perceive themselves to have less control over their child's behavior, but not for those female caregivers who perceive themselves to have more control over their child's behavior.

5. The indirect effect of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through negative parenting (i.e., punitive, inconsistent) is conditional on parental self-efficacy, such that more parental self-efficacy attenuates the relation between child temperament and negative parenting. Thus, the indirect effect is significant for female caregivers with less parental self-efficacy, but not for those female caregivers who report having more parental self-efficacy.
6. The indirect effect of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through positive parenting is conditional on PLOC, such that a more internal locus of control attenuates the relation between child temperament and positive parenting. Thus, the indirect effect is significant for female caregivers with a more external locus of control, but not for those female caregivers with a more internal locus of control.
7. The indirect effect of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through positive parenting is conditional on parents' perceptions of control of their child's behavior, such that perceptions of more control attenuate the relation between child temperament and positive parenting. Thus, the indirect effect is significant for female caregivers who perceive themselves to have less control of their child's behavior, but not for those female caregivers who perceive themselves as having more control over their child's behavior.

8. The indirect effect of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through positive parenting is conditional on parental self-efficacy, such that more parental self-efficacy attenuates the relation between child temperament and positive parenting. Thus, the indirect effect is significant for female caregivers with less parental self-efficacy, but not for those female caregivers who report having more parental self-efficacy.

CHAPTER II - METHOD

Participants

One hundred sixty-eight female primary caregivers of preschool-aged children (ages 3-5 years) participated in the study. To be included in the study, participants had to be female, age 18 or older, the primary caregiver of a child 3-5 years of age, and able to read and write in English. Parents who had target children that were previously diagnosed with an autism spectrum disorder or developmental delay were not eligible to participate in the study.

Twenty-two participants were excluded for the following reasons: male caregiver completed the measure ($n = 2$), patterned responding on one or more of the measures ($n = 3$), no response on the majority of items on a measure ($n = 4$), child age not within the specified age range ($n = 11$), the sex of the child was not reported ($n = 1$), and selecting multiple responses for the same item for multiple items ($n = 1$).

The final sample included 146 female caregivers of children ages 3-5 years. All participants were recruited through school and daycare programs in southern Mississippi. Tables 1 and 2 contain descriptive information regarding the participants and target children. Participants' scores on the Hollinghead (1975) Four-Factor Index of Social Status ranged from 11 to 66 ($M = 38.03$, $SD = 13.84$). The median combined family income range was \$25,000-\$29,999. The median education level for female caregivers was some college or specialized training (see Table 2 for more detail). The majority of the female caregivers were the children's biological mothers (93.2%). Female caregivers reported a mean age of 30.66 ($SD = 7.06$, range 20 to 66). The majority of caregivers reported raising their child with the help of a significant other (56.8%), while 23.3%

reported raising their child alone, 14.4% with the help of family, and 5.5% of the participants chose not to respond. Target children were predominantly White (50.0%) and Black (47.3%), had a mean age of 3.61 (SD = .57) and 54.1% were female.

Table 1

Target Children Characteristics by Completion Method

Characteristic	Paper in Person N (%)	Paper Take- Home N (%)	Online N (%)	Total N (%)
Child Sex				
Male	43 (52.4)	11 (27.5)	13 (54.2)	67 (45.9)
Female	39 (47.6)	29 (72.5)	11 (45.8)	79 (54.1)
Child Age				
3	37 (45.1)	16 (40.0)	10 (41.7)	63 (43.2)
4	44 (53.7)	20 (50.0)	13 (54.2)	77 (52.8)
5	1 (1.2)	4 (10.0)	1 (4.2)	6 (4.1)
Child Race				
Asian	0 (0)	2 (5.0)	0 (0)	2 (1.4)
Black	67 (81.7)	1 (2.5)	1 (4.2)	69 (47.3)
White	15 (18.3)	36 (90.0)	22 (91.7)	73 (50)
Multiracial	0 (0)	1 (2.5)	1 (4.2)	2 (1.4)
Socioeconomic Status Level				
I	8 (9.8)	0 (0)	0 (0)	8 (5.5)
II	23 (28.0)	4 (10.0)	2 (8.3)	29 (19.9)
III	39 (47.6)	4 (10.0)	2 (8.3)	45 (30.8)
IV	5 (6.1)	14 (35.0)	12 (50.0)	31 (21.2)
V	0 (0)	17 (42.5)	8 (33.3)	25 (17.1)
Not able to be calculated	7 (8.5)	1 (2.5)	0 (0)	8 (5.5)

Note. For socioeconomic status, higher levels indicate higher class. Eighty-two participants completed the study in person on paper, 40 participants completed the study at home on paper, and 24 participants completed the study at home online.

Table 2

Descriptive Characteristics of Caregivers

Caregiver Characteristic	Paper in Person (<i>n</i> = 82) N (%)	Paper Take- Home (<i>n</i> = 40) N (%)	Online (<i>n</i> = 24) N (%)	Total (<i>n</i> = 146) N (%)
Relation to Target Child				
Biological mother	73 (89.0)	40 (100.0)	23 (95.8)	136 (93.2)
Adoptive mother	1 (1.2)	0 (0)	1 (4.2)	2 (1.4)
Grandmother	3 (3.7)	0 (0)	0 (0)	3 (2.1)
Legal guardian (e.g., foster mother)	2 (2.4)	0 (0)	0 (0)	2 (1.4)
Other	1 (1.2)	0 (0)	0 (0)	1 (0.7)
No Response	2 (2.4)	0 (0)	0 (0)	2 (1.4)
Biological Parents' Marital Status				
Single (never married)	45 (54.9)	3 (7.5)	3 (12.5)	51 (34.9)
Currently married	10 (12.2)	31 (77.5)	19 (79.2)	60 (41.1)
Currently living together (not married)	4 (4.9)	3 (7.5)	0 (0)	7 (4.8)
Separated	4 (4.9)	0 (0)	1 (4.2)	5 (3.4)
Divorced	4 (4.9)	1 (2.5)	1 (4.2)	6 (4.1)
Widowed	1 (1.2)	0 (0)	0 (0)	1 (.7)
No Response	14 (17.1)	2 (5.0)	0 (0)	16 (11.0)
Caregiver's Education Level				
Junior High	1 (1.2)	0 (0)	0 (0)	1 (.7)
Some High School	6 (7.3)	0 (0)	0 (0)	6 (4.1)
High School Grad	25 (30.5)	1 (2.5)	0 (0)	26 (17.8)
Some college or specialized training	33 (40.2)	7 (17.5)	2 (8.3)	42 (28.8)
Standard college or university grad	15 (18.3)	22 (55.0)	15 (62.5)	52 (35.6)
Graduate professional degree	1 (1.2)	10 (25.0)	7 (29.2)	18 (12.3)
No response	1 (1.2)	0 (0)	0 (0)	1 (.7)

Note. Eighty-two participants completed the study in person on paper, 40 participants completed the study at home on paper, and 24 participants completed the study at home online.

Measures

Children's Behavior Questionnaire

The Children's Behavior Questionnaire (CBQ; Rothbart et al., 2001) is a 195-item caregiver-report instrument that assesses 15 dimensions of child temperament comprising three factors: Extraversion/Surgency, Negative Affectivity, and Effortful Control. The scales that load on the Extraversion/Surgency factor are Impulsivity, High Intensity Pleasure, Activity Level, and Shyness (which loaded negatively). Smiling/Laughter and Positive Anticipation also had substantial loadings on the Extraversion/Surgency factor. For the present study, the scales of High Intensity Pleasure, Impulsivity, Shyness (reverse-scored), Activity Level, and Approach/Positive Anticipation were combined to form the Extraversion/Surgency factor. The scales that load on the Negative Affectivity factor are Discomfort, Sadness, Fear, Anger/Frustration, and Soothability (which loaded negatively). The scales that load on the Effortful Control factor are Low Intensity Pleasure, Smiling/Laughter, Inhibitory Control, Perceptual Sensitivity, and Attentional Control. Items are rated on a 7-point Likert scale ranging from 1 (extremely untrue of your child) to 7 (extremely true of your child). Scale developers reported reliability and validity estimates for children ages 3-7 years, with coefficient alphas for the 15 scales ranging from .67 to .94 (Rothbart et al., 2001). Specifically, for 4- and 5-year-olds on the scales that compose the Negative Affectivity, Extraversion/Surgency, and Effortful Control factors, coefficient alphas ranged from .64 to .92, with a mean reliability coefficient of .78. Convergent validity was also evaluated by correlating parents' ratings. The mean interrater agreement for the scales that compose these three factors in a sample of 5-year-olds was .51 (range .28-.79). Mean test-retest reliability estimates for the scales

that compose these three factors were .65 (range .50-.79) for mother ratings (Rothbart et al., 2001).

A short version of the CBQ (CBQ-SF) was created by Putnam and Rothbart (2006) and is the measure of child temperament used in the present study. This 94-item short form, with the same three factors as the full-length form, was created by eliminating items that had 20% or more participants respond as *not applicable* and then including only six items on each scale that had the highest mean item-total correlations. Internal consistency of the shorter scales was then evaluated and items from the standard scale were added as needed to improve internal consistency. Alpha coefficients on the scales of the short form ranged from .61 to .85. Stability coefficients over a 33-45 month time period for maternal report on the scales ranged from .53 to .80. Evidence for internal consistency of the Negative Affectivity ($\alpha = .78$), Extraversion/Surgency ($\alpha = .79$), and Effortful Control ($\alpha = .87$) factors were also found for the CBQ-SF (Pinard, 2011). All three factors were used as the predictor variables for the present study. In the present study, missing data on the CBQ-SF were replaced using the mean prior to calculating coefficient alpha for the scales. Coefficient alphas for the three factors were within an acceptable range: Negative Affectivity ($\alpha = .79$), Extraversion/Surgency ($\alpha = .77$), and Effortful Control ($\alpha = .81$).

Parental Locus of Control Scale

The Parental Locus of Control Scale (PLOC; Campis et al., 1986) is a 47-item measure of locus of control specific to the parenting role designed for use with parents of school-aged children. On the PLOC, parents are asked to rate to what extent they agree with each statement on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly

agree). Factor analysis of this measure revealed five factors: Parental Efficacy, Parental Responsibility, Child Control of Parents' Life, Parental Belief in Fate/Chance, and Parental Control of Child's Behavior (PCCB). These scales combine to form a Total Score, with higher values indicating a more external locus of control and lower scores indicating a more internal locus of control (Roberts, Joe, & Rowe-Hallbert, 1992). Given that higher numbers on the total scale indicate more external locus of control, higher numbers on the respective subscales indicate less parental self-efficacy, less parental responsibility, more child control of parents' life, more parental belief in fate/chance, and less PCCB.

Coefficient alpha for the total scale when used with school-aged children was .92 in the measure development study (Campis et al., 1986). For the individual factors, the alpha coefficients were .75 for Parental Efficacy, .77 for Parental Responsibility, .67 for Child Control of Parents' Life, .75 for Parental Belief in Fate/Chance, and .65 for PCCB (Campis et al., 1986). Reliability for the PLOC was also estimated in a sample of parents of children ages 2-10 years of age (Roberts et al., 1992). In this study, the two-week test-retest reliability coefficient for the total scale was $r = .83$ and alpha coefficient for the total scale was .81.

In the present study, parents' overall locus of control, as well as PCCB and Parental Efficacy, were tested as potential moderators of the indirect effect of child temperament on externalizing behavior through parenting practices. Coefficient alphas for the three factors from this measure used in the present study are within an acceptable range: overall Parental Locus of Control ($\alpha = .83$), Parental Efficacy ($\alpha = .76$), and PCCB ($\alpha = .80$).

Alabama Parenting Questionnaire – Preschool Revision

The Alabama Parenting Questionnaire – Preschool Revision (APQ-PR; Clerkin, Marks, Policaro, & Halperin, 2007) is a self-report measure of parenting practices that was adapted from the original Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996). Parents indicate on a 5-point Likert scale the frequency with which they engage in each parenting practice ranging from 1 (never) to 5 (always). To create this measure, Clerkin et al. (2007) eliminated ten of the items that were determined to be inappropriate for preschool-aged children from the original APQ. Principal components analysis of the APQ-PR in a sample of 160 parents of children ages 3-6 years resulted in further deletion of items that did not load above .40 on a factor or cross-loaded. This analysis resulted in a total of 24 items across three factors: Positive Parenting, Inconsistent Parenting, and Punitive Parenting (Clerkin et al., 2007). Internal consistency estimates for each of the three factors were as follows: Positive Parenting ($\alpha = .82$), Inconsistent Parenting ($\alpha = .74$), and Punitive Parenting ($\alpha = .63$). One year test-retest reliability estimates were $r = .52$ for Positive Parenting, $r = .59$ for Inconsistent Parenting, and $r = .80$ for Punitive Parenting. In the present study, internal consistency estimates were $\alpha = .88$ for Positive Parenting, $\alpha = .79$ for Inconsistent Parenting, and $\alpha = .59$ for Punitive Parenting. There was a significant and moderate bivariate correlation between Inconsistent and Punitive Parenting scales, $r = .47$, $p < .001$, and these variables were expected to function similarly in the proposed models; thus, the two scales were combined to form a Negative Parenting composite. To create this composite, Inconsistent and Punitive Parenting were both transformed into z-scores, summed, and divided by 2 to

form a standardized Negative Parenting composite. For uniformity, the Positive Parenting scale was also transformed into a z-score.

Eyberg Child Behavior Inventory

The Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999) is a 36-item measure of child behavior problems in children ages 2-16 years of age. For each item on the ECBI, the parent is asked to indicate whether the child behavior is a problem for them on the Problem scale (Yes/No) and to indicate how often the behavior occurs on a 7-point Intensity scale (1 = Never, 7 = Always). The Intensity scale was chosen for use in this study as a measure of externalizing behaviors as it has more variability than the Problem scale. There is evidence of test-retest reliability for the ECBI Intensity score in a primarily Caucasian sample, $r = .75$ (Funderburk, Eyberg, Rich, & Behar, 2003). There was also evidence for concurrent validity of the ECBI, as it correlated significantly, $r = .53$, with the Preschool Behavior Questionnaire – Parent Completed (PBQ-P; Campbell, Breaux, Ewing, & Szumowski, 1984), another measure of child behavior. In a sample of children ages 3-6 years of age from predominantly low-income families, there was evidence for construct validity of the Intensity scale with a one-factor structure for both African-American children and non-Latino White children (Butler, 2013). There was also evidence for convergent validity with this sample, as the Intensity subscale was significantly correlated with the Child Behavior Checklist for 4- to 18-year-olds (CBCL/4-18; Achenbach, 1991). Evidence for internal consistency was also provided – the alpha coefficient for the non-Latino White sample was .95 and in the African American sample was .94. Internal consistency for the ECBI Intensity score in the current sample was $\alpha = .96$.

Demographic Form

Caregivers were asked to complete a form to obtain demographic information about them and their children. Information requested included a range of descriptive characteristics of the child and family such as the child's and parent's age, gender, ethnicity, treatment history, family size, parents' marital status, employment status, household income, highest level of education completed, place of employment, and occupation/job position (see Appendix A).

Procedure

Approval was obtained from the Institutional Review Board prior to the initiation of participant recruitment (Appendix B). All participants completed a demographic form, the CBQ-SF, APQ-PR, PLOC, and ECBI, as well as additional questionnaires that were part of a larger study. Participants completed the study either online or by paper and pencil. The online version of the study was set up through Qualtrics, a secure survey website. For data obtained online, electronic identifying information was separated from the remainder of the data after it was downloaded. Electronic identifying information was saved in a separate password protected document.

To obtain participants for the present study, the researchers provided three different completion methods. For all methods, the researchers contacted directors of preschools and daycare programs to request their assistance in distributing study materials to caregivers. For the first completion method, a table was set up at registration to recruit caregivers and have them consent to the study (Appendix C) and complete the measures on paper at that time. This method was used at Head Start ($n = 82$).

For the second and third completion methods, the investigators recruited participants by providing paper flyers with contact information of the investigators to the directors and principals to forward on to the caregivers of children that attend those programs. Caregivers had two options via this recruitment method: 1) They could access the study directly online by entering the web address provided on the flyer into their internet browser or 2) they could return a form indicating their interest to participate and the investigators then provided a paper packet to be sent home with their child for the caregiver to complete and return to the preschool for pickup.

For participants who chose to participate in the study online ($n = 24$), the consent form was included online and participants were asked to check a box to indicate that they understood the requirements of the study and to consent to participation. On Qualtrics, identifying information was optional for participants to provide at the end of the survey for distribution of gift cards.

For those participants who were provided with paper packets through the preschools ($n = 40$), their contact information was recorded at the time of distribution along with the participant number that was on their packet. For those participants who did not return a paper packet within one week or returned a packet that has 20% or less of a measure completed, one of the research staff contacted the participant to check in on their continued willingness to participate and to request the completion and return of study documents. Demographic characteristics of the sample by recruitment method are provided in Tables 1 and 2.

All participants were offered a \$10 gift card to a national retailer for their participation in the study. For participants who completed a paper packet as part of

recruitment through schools, they had the option to have the gift card sent home with their child or sent via e-mail. For participants who completed the study online, they had the option to receive a gift card electronically or have it sent to their mailing address. In the consent form, participants were informed that they would not be eligible to receive compensation if they did not complete all questionnaires for the study.

CHAPTER III - RESULTS

Preliminary Analyses

Any participants having less than 80% of the questions answered on a measure of interest to the main analyses were excluded from analyses. Missing data for the remaining participants were imputed using multiple regression, with the exception of missing data on the CBQ-SF. Multiple regression imputation predicts the missing value by creating a prediction equation that uses information from the cases with complete data to predict the missing values (Meyers, Gamst, & Guarino, 2006). Missing data on the variables of interest was calculated to be 0.008% of the items. For the CBQ-SF, the scales were comprised by calculating averages of the items for that particular scale, so missing data were not imputed for main analyses. Mathematically, this method of addressing missing data on the CBQ-SF was equivalent to replacing with the individual's mean score on that scale. Replacing missing data using multiple regression was the preferred method because mean substitution reduces the variability of the variable (Meyers et al., 2006).

Differences in demographic characteristics were analyzed among participants who responded online, in person on paper, and at home on paper using one-way analysis of variance (ANOVA) for continuous variables and chi-square tests for categorical variables. For continuous variables that violated the homogeneity of variance assumption, nonparametric alternatives were used including the Welch statistic for a global test and Games-Howell as post-hoc tests for continuous variables. The groups were significantly different in their racial composition ($\chi^2 = 75.24, p < .001$), single parenting ($\chi^2 = 12.21, p = .002$), income ($F = 131.00, p < .001$), and caregiver education

(Welch's $F = 54.83, p < .001$). Specifically, the participants who completed the study in person on paper (i.e., Head Start) were lower income, had less education, and were more likely to be single parents than those who completed the study at home on paper or online. These differences among groups are consistent with what would be expected, given that the only participants who completed the study in person were recruited from Head Start, a low-income and predominantly African-American population, and the participants who completed the study at home, either online or on paper, were recruited through typical preschools and daycares. Thus, differences among the completion methods are confounded with differences in socio-economic status and race. However, these methods were employed in an effort to recruit a more racially and socioeconomically diverse sample of preschool children.

The take-home home paper and online recruitment methods were further examined with respect to sampling differences and were found to not differ in terms of racial and socioeconomic characteristics. Specifically, the groups were not different in terms of the race of the child, $\chi^2 = .05, p = .83$, and co-parenting status, $\chi^2 = .27, p = .61$, and did not have significantly different Hollingshead scores, $t(61) = .94, p = .35$ nor incomes, $t(62) = -.06, p = .95$. Thus, the take-home methods (i.e., online and paper) were combined together into one group (which will henceforth be referred to as *Other Preschools*) and compared to the in-person paper group (which will be referred to as *Head Start*) on the outcome variables.

When comparing participants for Head Start and Other Preschools, the groups differed significantly in negative parenting, Welch's $t = 2.19, p = .03$, Parental Locus of Control, $t = 3.29, p = .001$ and Parental Efficacy, Welch's $t = 4.15, p < .001$.

Specifically, Head Start participants reported engaging in significantly more negative parenting, had a significantly more external parental locus of control, and had less parental self-efficacy than participants recruited through Other Preschools. The difference between the two groups for positive parenting, $t = 1.89$, $p = .06$ approached significance. Specifically, Head Start participants reported engaging in more of both types of parenting practices as compared to the participants recruited through Other Preschools. The groups were not significantly different on any of the child temperament dimensions or child externalizing behaviors (see Table 3). Given that differences in results were not due solely to completion method, participants from all completion methods were combined into a single sample for all subsequent analyses.

Table 3

Nonsignificant Comparisons for Outcome Variables between Head Start and Other Preschools

Outcome Variable	<i>t</i> -value	<i>df</i>	<i>p</i>
Negative Affectivity	-.42	143.95	.68
Extraversion/Surgency	-.76 ^a	144	.46
Effortful Control	-.71	144	.48
Externalizing Behaviors	-.13 ^a	143.26	.19

Note: ^a Indicates that Welch's *t* was used because there were unequal variances in the two groups on that particular variable.

Descriptive Data on Variables of Interest

Descriptive data for the main study variables are provided in Table 4. Variables were evaluated for assumptions of the main analyses. Given the expectation of some clinical cases in the data set, no transformations were made.

Table 4

Descriptive Results for Variables of Interest

	<i>M</i>	<i>SD</i>	Actual Range		Possible Range		Skew	Kurtosis
			Min.	Max	Min.	Max.		
Negative Affectivity	3.94	0.67	2.24	5.75	1	7	.05	.30
Extraversion/Surgency	4.70	0.61	2.74	6.10	1	7	-.16	.29
Effortful Control	5.34	0.59	3.51	6.63	1	7	.02	-.09
Parental Locus of Control (Total)	106.83	18.09	62.00	171.00	47	235	.68	1.05
Parental Control of Child's Behavior	23.09	6.85	10.00	44.00	10	50	.38	.03
Parental Efficacy	16.43	5.85	10.00	36.00	10	50	1.40	1.66
Negative Parenting	-.003	0.86	-1.61	4.24	-	-	1.55	5.33
Positive Parenting	0	1	-4.11	1.02	-	-	-1.43	2.32
Externalizing Behavior	95.56	37.96	36.00	236.00	36	252	.81	1.20

Note. M = Mean; SD = Standard deviation; Min = Minimum; Max = Maximum.

Using the total combined sample ($N = 146$), bivariate correlations were calculated among the demographic variables (i.e., child sex, socio-economic status, child race, and child age) and all possible outcome variables, including the two parenting practice variables and child externalizing behavior. Child sex and child race were the only demographic variables that were significantly related to child externalizing behaviors and, thus, were controlled in main analyses (Table 5). Socio-economic status and child race were both significantly related to negative parenting practices (Table 5). None of the demographic variables were significantly related to positive parenting (Table 5). Those demographic variables that were significantly related to the outcome variables were controlled in subsequent analyses.

Table 5

Bivariate Correlations between Demographic Variables and Outcome Variables

	Child Externalizing Behavior	Negative Parenting	Positive Parenting
Child Sex	-.18*	-.004	-.13
Child Race	-.19*	.19*	.07
Child Age	-.06	.01	.09
SES	.09	-.25**	.003
Coparenting	.14	-.002	-.02

Note. Child gender coded as 0 = male, 1 = female. Child race was dichotomized into 0 = White and 1 = non-White. Coparenting was dichotomized into 0 = single parenting 1 = coparenting. SES = Hollingshead 4-factor index of social status.

* $p < .05$, ** $p < .01$.

Data Analytic Model

Zero-order Correlations

Bivariate correlations were calculated among all variables in the present study and are displayed, along with significance indicators, in Table 6. Only those correlations related to the overall models and that were not tested at the zero-order level for Hypothesis 1 and 2 are discussed here. Child temperament variables were related to child externalizing behavior in the expected directions; negative affectivity and extraversion/surgency were positive and effortful control was negative. Parenting practices related to child externalizing behaviors in the expected directions, as well, with negative parenting having a positive, and positive parenting a negative, relation.

Hypothesis 1

Zero-order and partial correlations were conducted to address Hypothesis 1 regarding relations between child temperament dimensions and parenting practices. None of the demographic variables evaluated were significantly correlated with positive parenting, so zero-order correlations were examined for relations with positive parenting. Child race and SES were both significantly related to negative parenting, so they were entered as covariates in correlation analyses that looked at relations of the temperament variables with negative parenting. Bivariate correlations with positive parenting revealed a significant positive relation with effortful control, $r = .42, p < .001$, as predicted, but nonsignificant relations with negative affectivity, $r = -.02, p = .78$, and extraversion/surgency, $r = .007, p = .93$. Partial correlations with negative parenting indicated a significant positive relation with child negative affectivity, $r(134) = .29$,

Table 6

Bivariate Correlations among Variables of Interest

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Negative Affectivity	--								
2. Extraversion/ Surgency	.003	--							
3. Effortful Control	-.11	.12	--						
4. Parental Locus of Control (Total)	.16	.02	-.44***	--					
5. Parental Control of Child	.21*	.10	-.32***	.68***	--				
6. Parental Efficacy	.10	-.14	-.40***	.77***	.35***	--			
7. Negative Parenting	.27**	.12	-.22**	.51***	.48***	.49***	--		
8. Positive Parenting	-.02	.007	.42***	-.32***	-.29***	-.33***	-.17*	--	
9. Externalizing Behaviors	.40***	.24**	-.22**	.27**	.43***	.15	.35***	-.21*	--

Note. $N = 146$. * $p < .05$ ** $p < .01$ *** $p < .001$

$p = .001$, and a significant negative relation with effortful control, $r(134) = -.19$, $p = .03$, as predicted, but no significant relation with extraversion/surgency, $r(134) = .13$, $p = .13$.

Hypothesis 2

To address Hypothesis 2, partial correlations were conducted among child externalizing behaviors and each of the temperament factors after controlling child race and child sex, which were significantly associated with child externalizing behavior in preliminary analyses. Partial correlations with externalizing behavior were significant for relations with negative affectivity, $r(142) = .43$, $p < .001$, extraversion/surgency, $r(142) = .20$, $p = .02$, and effortful control, $r(142) = -.22$, $p = .008$, as predicted.

Statistical Analyses for Hypotheses 3-8

Six mediation analyses were conducted as preliminary analyses using the PROCESS tool (Hayes, 2013) in SPSS to assess for an indirect effect of each type of temperament on child externalizing behavior through each type of parenting (negative parenting, positive parenting). These analyses are necessary in order to determine whether there is an indirect effect apart from the moderated indirect effect, since moderated-mediation analyses in PROCESS only provide bootstrap confidence intervals for the indirect effect *at different levels of the moderator*. Indirect effects were evaluated using bootstrapping analyses to estimate a bias-corrected confidence interval (CI) for the indirect effect with 5,000 resamples with replacement (Hayes, 2013). For this type of analysis, confidence intervals that do not include zero indicate a significant indirect effect (Hayes, 2013).

Eighteen moderated-mediation analyses were also conducted using the PROCESS macro with externalizing behavior as the outcome, each of the temperament variables

(negative affectivity, extraversion/surgency, effortful control) entered as predictors, parenting variables (positive, negative) as mediators in separate models, and parental locus of control (total, PCCB, and parental self-efficacy) entered as moderators in separate models. Using the PROCESS macro, all independent variables were centered when conducting analyses, as centering can aid in interpretation of the results such that the *B* coefficient for the predictor variable estimates the effect of the moderator on the outcome when the value of the predictor is equal to zero (Hayes, 2013). Child race and child sex were controlled in all moderated-mediation analyses because these demographic variables were significantly related to the outcome variable of child externalizing behavior in the preliminary bivariate correlation analyses. Bootstrap analyses with 5,000 resamples with replacement were used to generate conditional indirect effects (Hayes, 2013). The first stage of the output provides information on the magnitude and statistical significance of the interaction between the predictor and moderator on the mediating variable. If this first stage moderation (i.e., interaction) is significant, the overall indirect effect is also considered to be moderated (Hayes, 2012). To probe significant interactions, the conditional effect of the predictor variable (i.e., temperament) on the outcome variable (i.e., parenting practices) was estimated at various levels of the moderating variable (i.e. parental locus of control). Specifically, we examined the indirect effect values corresponding to the 10th, 25th, 50th, 75th, and 90th percentiles in the distribution of the moderator. For those models that had significant moderation in the overall moderated-mediation model, post-hoc simple moderation models were conducted to further evaluate the direction of the effect. The effect of X on Y at different levels of the moderator (i.e., the mean and one standard deviation below and above the mean) were

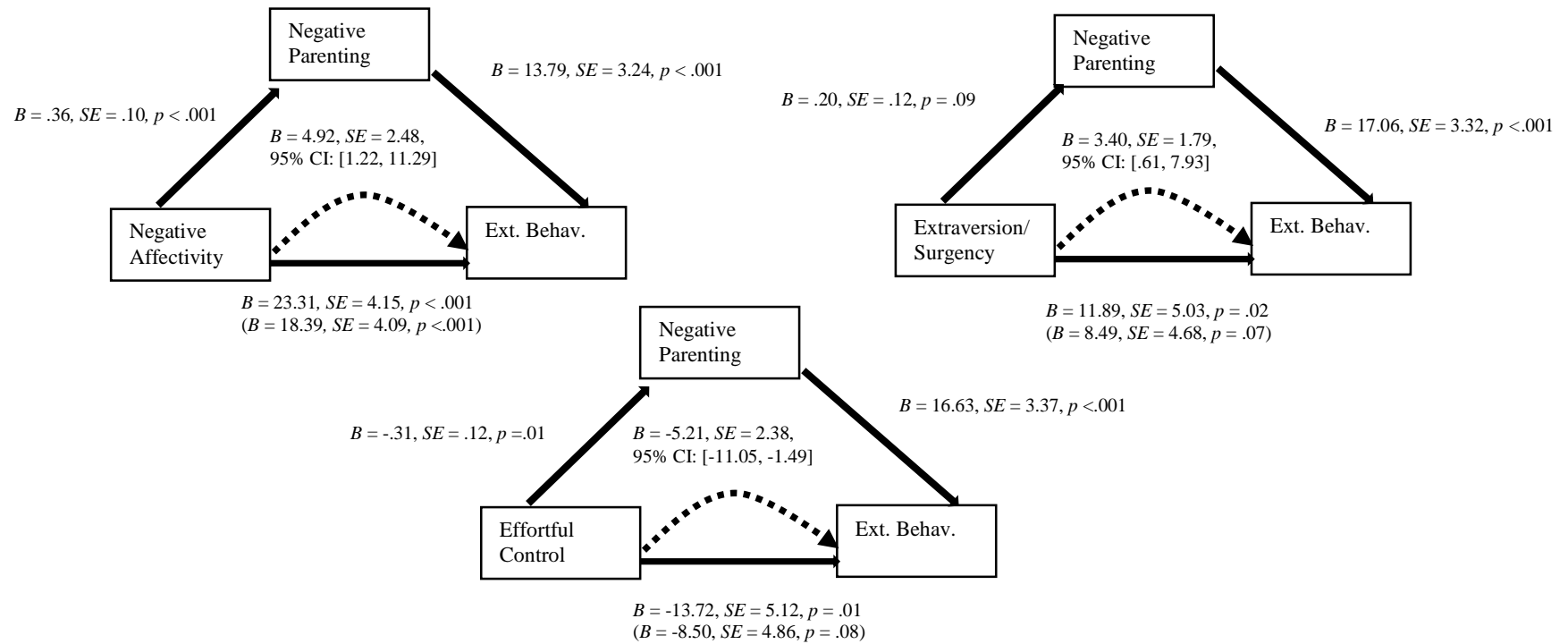
analyzed and plotted. When interpreting the results, it is important to remember that on the parental locus of control measure, higher values are related to more external locus of control (and thus, less PCCB and less parental self-efficacy), and lower values are related to more internal locus of control (and thus, more PCCB and more parental self-efficacy). Tables for the conditional indirect effect estimates of models that had nonsignificant results can be found in Appendix D.

Results of Preliminary Mediation Analyses for Hypotheses 3-5

Hypotheses 3-5 predict moderation of an indirect effect of each of the three types of temperament (i.e., negative affectivity, extraversion/surgency, and effortful control) on child externalizing behavior through negative parenting. Thus, results of preliminary simple mediation models to test for these indirect effects are reported here. Negative affectivity, extraversion/surgency, and effortful control were all examined as separate predictors, resulting in three simple mediation models.

Figure 1 displays the results for the three simple mediation models that examine negative parenting as the mediator for each of the temperament variables and child externalizing behavior. Child race and child sex were controlled in all models. The indirect effect of child negative affectivity through negative parenting generated a point estimate of 4.92, $SE = 2.48$ (95% CI [1.22, 11.29]). The indirect effect of child extraversion/surgency through negative parenting generated a point estimate of 3.40, $SE = 1.79$, (95% CI [.61, 7.93]). The indirect effect of child effortful control through negative parenting generated a point estimate of -5.21, $SE = 2.38$ (95% CI [-11.05, -1.49]). Thus, the indirect effects of all three temperament variables on child externalizing

behavior through negative parenting were significant. See Figure 1 for the unstandardized regression coefficients for these models.



49

Figure 1. Indirect effects of child temperament factors on child externalizing behaviors through negative parenting practices.

Note: Ext. Behav. = Externalizing Behavior. Child race and child sex were controlled in all models. The values in parentheses display the direct effect of the predictor on the outcome, after controlling for the mediator. Indirect effects (displayed above each curved, dashed arrow) were analyzed using bootstrapping analytical methods to estimate bias-corrected asymmetric confidence intervals (CI) around the indirect effects using 5,000 resamples with replacement (Hayes, 2013).

Moderated-mediation analyses for Hypothesis 3 (PLOC)

To evaluate Hypothesis 3, that the indirect effect of the three dimensions of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through negative parenting would be moderated by overall PLOC, three separate moderated-mediation models were conducted in PROCESS, with parental locus of control moderating the first path. Total PLOC did not significantly moderate the relation between child negative affectivity and negative parenting ($B = .003$, $SE = .005$, $p = .52$), child extraversion/surgency and negative parenting ($B = .005$, $SE = .006$, $p = .40$), nor child effortful control and negative parenting ($B = .003$, $SE = .005$, $p = .595$) when controlling for child race and child gender. Since the moderation of the first path in all of these models was not significant, the overall indirect effects were also not moderated by PLOC.

Moderated-mediation analyses for Hypothesis 4 (Parental Control of Child's Behavior; PCCB)

To evaluate Hypothesis 4, that the indirect effect of the three dimensions of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through negative parenting would be moderated by parents' perceptions of control over their child's behavior (PCCB), three separate moderated-mediation models were conducted in PROCESS, with PCCB moderating the first path. PCCB did not significantly moderate the relation between child negative affectivity and negative parenting ($B = .009$, $SE = .01$, $p = .43$), child extraversion/surgency and negative parenting ($B = -.01$, $SE = .02$, $p = .40$), nor effortful control and negative parenting ($B = -$

.003, $SE = .015$, $p = .82$), when controlling for child race and child gender. Since the moderation of the first path in all of these models was not significant, the overall indirect effects were also not moderated by PCCB.

Moderated-mediation analyses for Hypothesis 5 (Parental Self-efficacy)

To evaluate Hypothesis 5, that the indirect effect of the three dimensions of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through negative parenting would be moderated by parental self-efficacy, three separate moderated-mediation models were conducted in PROCESS, with parental self-efficacy moderating the first path. Parental self-efficacy did not significantly moderate the relation between child negative affectivity and negative parenting ($B = .02$, $SE = .01$, $p = .168$), nor between child effortful control and negative parenting ($B = .026$, $SE = .016$, $p = .11$), when controlling for child race and child gender. Since the moderation of the first path in both of these models was not significant, the overall indirect effects were also not expected to be moderated by parental self-efficacy.

Parental self-efficacy significantly moderated the relation between child extraversion/surgency and negative parenting ($B = .05$, $SE = .02$, $p = .014$), when controlling for child race and gender. Consistent with our hypothesis, tests of the conditional indirect effects revealed that negative parenting was less likely to mediate the relation between child extraversion/surgency and child externalizing behaviors when parents had higher self-efficacy (see Table 7). Specifically, higher levels of child extraversion/surgency were significantly related to higher levels of child externalizing behaviors through negative parenting, except when parents had high and very high levels

of parental self-efficacy (or more internal parental locus of control as it relates to parent's perceived abilities). Post-hoc simple moderations showed that when parental self-efficacy was low, there was a significant relation between child extraversion/surgency and negative parenting; however, when parental self-efficacy was high there was not a significant relation between child extraversion/surgency and negative parenting (see Figure 2).

Table 7

Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Self-efficacy

Outcome: Child Externalizing Behaviors					
Percentile	Parental Self-efficacy	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-6.43	-0.25	2.46	-5.85	4.29
25 th	-4.43	1.40	1.80	-1.77	5.65
50 th	-2.43	3.04	1.58	0.67	7.16
75 th	1.57	6.32	2.69	2.39	13.80
90 th	6.57	10.43	4.98	3.49	24.75

Results of Preliminary Mediation Analyses for Hypotheses 6-8

Hypotheses 6-8 predict moderation of an indirect effect of each of the three types of temperament (i.e., negative affectivity, extraversion/surgency, and effortful control) on child externalizing behavior through positive parenting. Thus, results of preliminary simple mediation models to test for these indirect effects are reported here. Negative affectivity, extraversion/surgency, and effortful control were all examined as separate predictors, resulting in three simple mediation models.

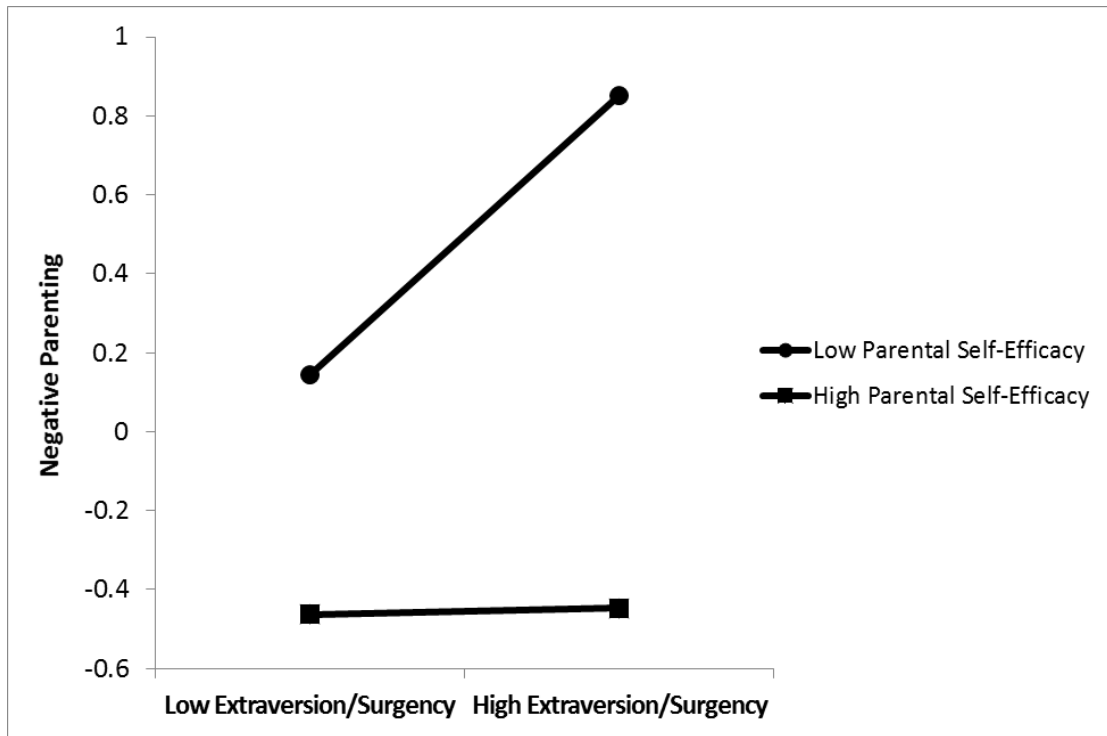
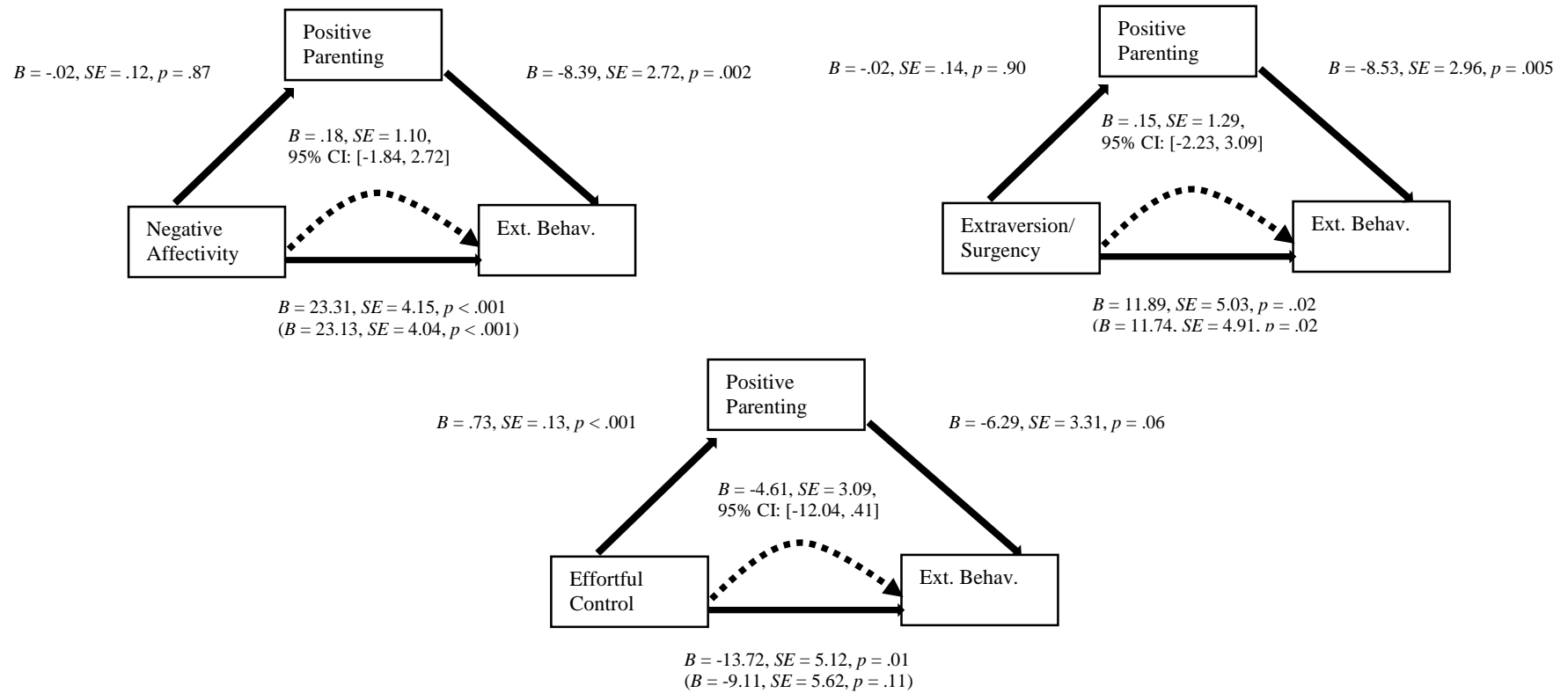


Figure 2. The Moderating Influence of Parental Self-efficacy on the Relation between Child Extraversion/Surgency and Negative Parenting Practices.

Figure 3 displays the results for the three mediation models that examine positive parenting as the mediator for each of the temperament variables and child externalizing behavior. Child race and child sex were controlled in all models. The indirect effect of child negative affectivity through positive parenting generated a point estimate of .18, $SE = 1.10$ (95% CI [-1.84, 2.72]). The indirect effect of child extraversion/surgency through positive parenting generated a point estimate of .15, $SE = 1.29$, (95% CI [-2.23, 3.09]). The indirect effect of child effortful control through positive parenting generated a point estimate of -4.61, $SE = 3.09$ (95% CI [-12.04, .42]). Thus, none of the indirect effects of the three temperament variables on child externalizing behavior through positive



54

Figure 3. Indirect effects of child temperament factors on child externalizing behaviors through positive parenting practices.

Note: Ext. Behav. = Externalizing Behavior. Child race and child sex were controlled in all models. The values in parentheses display the direct effect of the predictor on the outcome, after controlling for the mediator. Indirect effects (displayed above each curved, dashed arrow) were analyzed using bootstrapping analytical methods to estimate bias-corrected asymmetric confidence intervals (CI) around the indirect effects using 5,000 resamples with replacement (Hayes, 2013).

parenting were significant. See Figure 3 for the unstandardized regression coefficients and point estimates for these models.

Moderated-mediation analyses for Hypothesis 6 (PLOC)

To evaluate Hypothesis 6, that the indirect effect of the three dimensions of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through positive parenting would be moderated by PLOC, three separate moderated-mediation models were conducted in PROCESS, with parental locus of control moderating the first path. PLOC significantly moderated the relation between child effortful control and positive parenting ($B = .01$, $SE = .006$, $p = .019$), when controlling for child race and gender. Child effortful control significantly predicted positive parenting practices ($B = .59$, $SE = .14$, $p < .001$). Also in this model, the second path from positive parenting practices to child externalizing behaviors approached significance ($B = -6.29$, $SE = 3.31$, $p = .06$). Tests of the conditional indirect effects revealed that the indirect effect of child effortful control on child externalizing behaviors through positive parenting was consistently negative and increased in magnitude as PLOC increased (see Table 8). The 95% bootstrap confidence interval for the conditional indirect effect did not include zero only for those that had high parental internal locus of control (25th percentile), but these confidence intervals did include zero for those that had very high, moderate, low, and very low levels of parental internal LOC. Thus, positive parenting only mediates the relation between child effortful control and child externalizing behaviors for those caregivers who have a high parental internal LOC (see Table 8). Post-hoc simple moderations showed that when parents were high on external

PLOC (i.e., low internal LOC), there was a significant positive relation between child effortful control and positive parenting; however, when parents had low PLOC (i.e., high internal LOC), there was not a significant relation between child effortful control and positive parenting (see Figure 4).

Table 8

Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Positive Parenting at Different Levels of Total Locus of Control

Outcome: Child Externalizing Behaviors					
Percentile	Total PLOC	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-22.06	-1.75	1.76	-7.23	0.21
25 th	-10.83	-2.74	1.96	-8.26	-0.01
50 th	-2.53	-3.47	2.31	-9.43	0.002
75 th	8.17	-4.41	2.91	-11.54	0.02
90 th	21.17	-5.56	3.74	-14.99	0.02

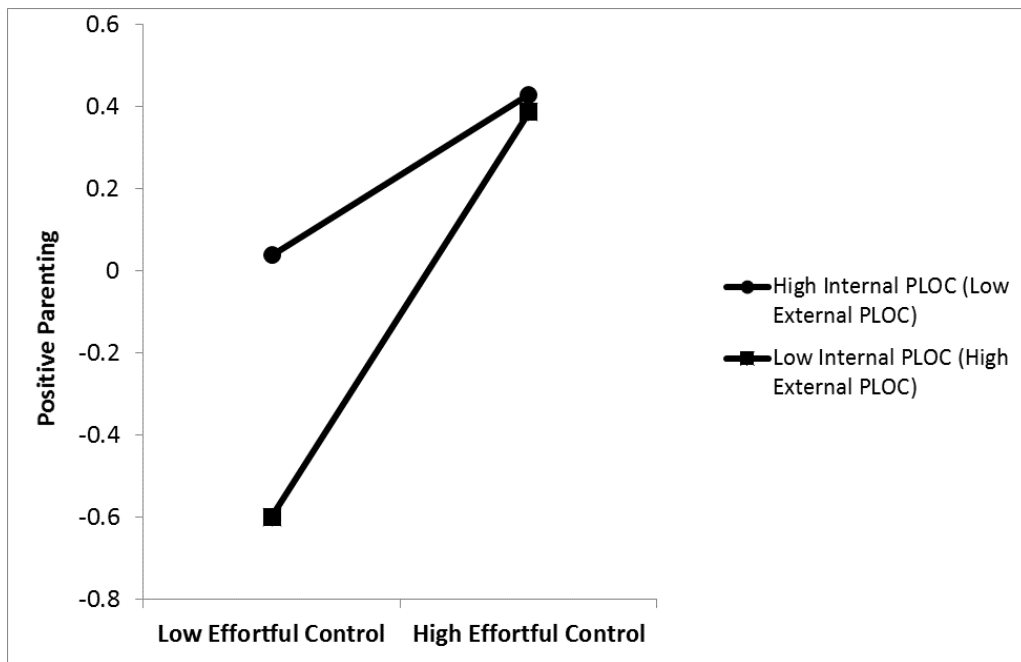


Figure 4. The moderating influence of PLOC on the relation between child effortful control and positive parenting practices.

However, PLOC did not significantly moderate the relation between child negative affectivity and positive parenting ($B = .001$, $SE = .006$, $p = .92$), nor the relation between child extraversion/surgency and positive parenting ($B = .001$, $SE = .008$, $p = .93$), when controlling for child race and child gender. Since the indirect effect for negative affectivity and child extraversion/surgency and the moderation of the first path in both of these models was not significant, the overall moderated-mediation models were also not expected to be significant.

Moderated-mediation analyses for Hypothesis 7 (Parental Control of Child's Behavior)

To evaluate Hypothesis 7, that the indirect effect of the three dimensions of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through positive parenting would be moderated by parents' perceptions of control of their child's behavior, three separate moderated-mediation models were conducted in PROCESS, with PCCB moderating the first path. PCCB did not significantly moderate the relation between child negative affectivity and positive parenting ($B = .02$, $SE = .02$, $p = .33$), the relation between child extraversion/surgency and positive parenting ($B = -.002$, $SE = .02$, $p = .95$), nor the relation between child effortful control and positive parenting ($B = .03$, $SE = .02$, $p = .18$), when controlling for child race and child gender. Since the indirect effect for negative affectivity, child extraversion/surgency, and effortful control were not significant and the moderation of the first path in all of these models was not significant, the overall moderated-mediation models were also not expected to be significant.

Moderated-mediation analyses for Hypothesis 8 (Parental Self-efficacy)

To evaluate Hypothesis 8, that the indirect effect of the three dimensions of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behavior through positive parenting would be moderated by parental self-efficacy, three separate moderated-mediation models were conducted in PROCESS, with parental self-efficacy moderating the first path. Parental self-efficacy significantly moderated the relation between child effortful control and positive parenting ($B = .04$, $SE = .02$, $p = .04$), when controlling for child race and gender. Tests of the conditional indirect effects revealed that parental self-efficacy moderated the indirect effect of child effortful control on positive parenting at all levels of parental self-efficacy, with all bootstrap confidence intervals including zero; thus, there were no significant indirect effects at the levels of the moderator examined, which is consistent with the simple mediation results that there was no significant overall mediation. Thus, there was not a significant moderated-mediation. Results of a post hoc simple moderation analysis of parental self-efficacy on the relation between child effortful control and positive parenting practices was significant ($B = .04$, $SE = .02$, $p = .04$), when using the same control variables as in the overall moderated-mediation analysis. Probes of this interaction revealed that for those caregivers with low parental self-efficacy, child effortful control was significantly positively related to positive parenting practices. However, for those parents with high parental self-efficacy, the positive relation between effortful control and positive parenting was smaller in magnitude and only approached

significance ($p = .055$). See Figure 5 for a plot of the interaction between child effortful control and parental self-efficacy on positive parenting practices.

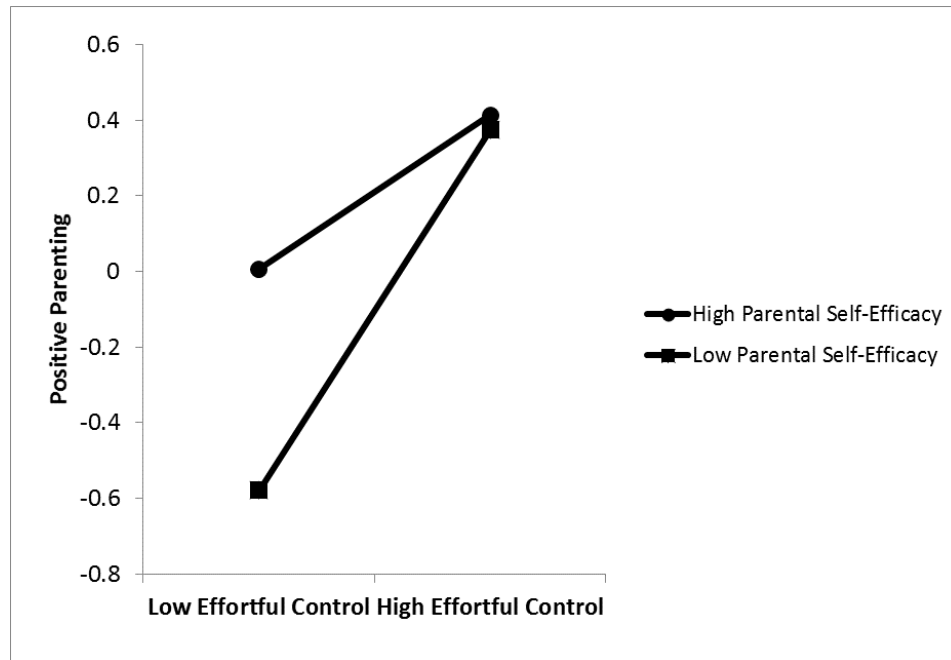


Figure 5. The moderating influence of parental self-efficacy on the relation between child effortful control and positive parenting practices.

Parental self-efficacy did not significantly moderate the relation between child negative affectivity and positive parenting ($B = -.02$, $SE = .02$, $p = .42$), nor the relation between child extraversion/surgency and positive parenting ($B = -.002$, $SE = .03$, $p = .93$), when controlling for child race and child gender. Since the indirect effect for negative affectivity and child extraversion/surgency were not significant and the moderation of the first path in both of these models was not significant, the overall moderated-mediation models were also not expected to be significant.

CHAPTER IV – DISCUSSION

Previous studies have provided evidence that more difficult aspects of child temperament influence parents' use of less optimal parenting practices and that a more internal locus of control is protective of this influence. Child temperament and parenting practices are also important predictors of externalizing behaviors in children. The present study expands on previous research by evaluating whether parenting practices are a mechanism through which more difficult aspects of child temperament are related to more child externalizing behaviors and whether more internal parental locus of control, parental self-efficacy, and PCCB are protective in this hypothesized model.

Many of the results in the present study were supportive of the study hypotheses. As predicted, the child temperament dimensions of negative affectivity and effortful control were significantly related in the expected direction to negative parenting practices (Hypothesis 1), which is a composite of punitive and inconsistent parenting. These results are consistent with previous research that found that child negative affectivity and/or its components are related to more authoritarian (Janssens, 1994) and inconsistent parenting (Lengua, 2006; Lengua & Kovacs, 2005) and that child effortful control is related to decreases in parental rejection (Lengua, 2006).

Also, both negative affectivity and child effortful control in the current study had significant relations with child externalizing behaviors in the expected direction (Hypothesis 2) and negative parenting practices was a significant mediator of these relations, which is consistent with a previous study by Gibbins (2001). Interestingly, these indirect effects in the present study were not moderated by PLOC (Hypothesis 3),

PCCB (Hypothesis 4), or parental self-efficacy (Hypothesis 5). These results suggest that both child negative affectivity and effortful control influence negative parenting practices, regardless of the level of PLOC, parental self-efficacy, or parents' perceptions of control of their child's behavior.

When examining findings from the bivariate correlations and the preliminary simple mediation analyses, it is interesting to note that child negative affectivity and child extraversion/surgency were not significantly related to positive parenting practices nor was there evidence from this study that these aspects of child temperament influence child externalizing behaviors indirectly through positive parenting practices. This is consistent with a study by Planalp and colleagues (2013) that did not find a significant relation between child negative affectivity and parents' caregiving and sensitivity. However, this result is inconsistent with a previous study that found evidence that lower activity from the child was related to more positive parenting (Akker et al., 2010). It is also noteworthy that child effortful control, unlike child negative affectivity and extraversion/surgency, had a significant relation with positive parenting practices, suggesting that child effortful control may be particularly influential in the use of positive parenting practices and/or that positive parenting practices are more influential in children's development of effortful control.

Although child negative affectivity and extraversion/surgency, along with child effortful control, did not have a significant indirect effect on child externalizing behaviors through positive parenting practices in the simple mediation models, all of these child temperamental characteristics had a significant indirect effect on child externalizing

behaviors through negative parenting practices. These results suggest that negative parenting practices may be more important than positive parenting practices to target in relation to externalizing behavior problems when working with parents of children that demonstrate more of these temperamental characteristics. This result is consistent with a study by Hanisch, Hautmann, Plück, Eichelberger, and Döpfner (2014) that found that both negative parenting and positive parenting mediated treatment effects on child externalizing behaviors and, although statistical significance was not directly tested comparing the two models, negative parenting had a larger mediating effect than positive parenting. However, it may be that positive parenting practices are more pertinent to other outcomes, such as establishing routines, developing prosocial behavior and learning preacademic skills, as opposed to preventing externalizing behavior problems.

Child effortful control was the only aspect of child temperament in this study with a significant relation with positive parenting practices, with less effortful control relating to less positive parenting (Hypothesis 1). Of the three moderators tested, only overall PLOC significantly moderated the relation between child effortful control and positive parenting practices (Hypothesis 6). PLOC did not significantly moderate the relation between any other aspect of child temperament and type of parenting practice (Hypotheses 3 and 6). Specifically, less child effortful control was related to fewer positive parenting practices, but only for those parents with low internal PLOC (i.e., high external PLOC), suggesting that high internal PLOC may be protective and attenuate this relation. The extent to which this moderating influence of PLOC extends to the influence of positive parenting practices on child externalizing behaviors is somewhat less clear. In

the moderated-mediation analysis, the relation between positive parenting practices and child externalizing behaviors only approached significance. Additionally, the indirect effect of child effortful control on child externalizing behavior through positive parenting practices (with less effortful control related to less positive parenting and less positive parenting related to more externalizing behaviors) was significant at high levels of internal PLOC, which is not consistent with hypotheses that high internal PLOC would be protective. These results suggest that effortful control may be a particularly important aspect of child temperament to consider when understanding caregiver's use of positive parenting practices and PLOC an important parent belief to consider in this relation. However, further studies are needed to determine the influence of these variables on child externalizing behavior.

Parental self-efficacy also moderated the relation between child effortful control and positive parenting practices (Hypothesis 8), with less effortful control significantly relating to fewer positive parenting practices for maternal caregivers with low internal locus of control; but this relation only approaching significance for those with more internal locus of control. In contrast, PCCB did not moderate this relation (Hypothesis 7). On the PLOC scale used in this study, parental self-efficacy appears to measure broader feelings of control in the parenting role, whereas PCCB appears to be measuring perceptions of control as it relates specifically to the behavior of the caregiver's child. Thus, these more general feelings of control in the parenting role may be the more relevant moderating influence and, thus, target of intervention than parents' feelings of control specific to their child's behavior. However, it again is somewhat unclear the

extent to which this moderating influence extends to child externalizing behaviors, as the indirect effect of child effortful control on child externalizing behaviors through positive parenting practices was not significant at all evaluated levels of parental self-efficacy. It is also noteworthy that parental self-efficacy moderated the indirect effect of extraversion/surgency on child externalizing behaviors through negative parenting practices (Hypothesis 5), but overall parental locus of control (Hypothesis 3) and PCCB (Hypothesis 4) did not moderate this indirect effect. Again, this result suggests that parental self-efficacy, as a broader measure of perceptions of control in the parenting role, is particularly important in helping to mitigate the influence of child extraversion/surgency on parenting practices. It is possible that since PCCB was not a significant moderator, it masks the influence of self-efficacy in the overall locus of control construct. It is also important to note that not only did parents' perceptions of control of their children's behavior not significantly moderate the relation between child effortful control and positive parenting, it also did not significantly moderate the relation between any temperament variables and parenting practices (Hypotheses 4 and 7), suggesting that it may be a less relevant aspect of locus of control when looking at the influence of child temperament on child externalizing behavior through parenting practices.

The results of this study have important implications for parent training interventions to target child externalizing behaviors, especially given that the first few sessions in protocols for these interventions frequently focus on increasing positive parenting behaviors (e.g., McMahon & Forehand, 2003). Given that the results of this

study found that parental self-efficacy and locus of control moderated the relation between child effortful control and positive parenting practices; parents that both have a child with low effortful control and lower parental self-efficacy/more external parental locus of control may need additional intervention before introducing positive parenting. For example, it may be beneficial to spend extra time on psychoeducation regarding child temperament and how parenting practices can help influence their child's patterns of behavior, even if their child has less effortful control than other children.

In addition, this study revealed lower self-efficacy and feelings of control among the Head Start portion of the sample comprised predominantly of lower SES, black parents. This is consistent with the results of a previous study that found that African-American mothers from a southern U.S. state were less likely to perceive their parenting to be effective if they perceived their financial resources to be less than adequate (Brody, Flor, & Gibson, 1999). Mirowsky and Ross (1989) present the theory that chronic financial stress can decrease parents' confidence, leading them to feel less able to control important aspects of their life and that this lack of confidence may spill over into the parenting role, leading them to believe that they are unable to influence their children's development (as cited in Brody et al., 1999). Thus, when working with parents from black and lower SES families, it may be important for therapists to consider the tendency of these caregivers to have lower self-efficacy and more external locus of control as well as factors that may be contributing to this lower self-efficacy. For example, therapists may need assess for parental self-efficacy and refer at risk families to services that can help them find the financial support and resources they need prior to starting parent

training interventions. Another possible step therapists may need to take is monitoring these parents' beliefs regarding their ability to influence their child's behavior, providing more education and encouragement throughout treatment.

Limitations and Directions for Future Research

There are several limitations that should be considered when interpreting the results of this study. Although the study sampled across racial groups and socioeconomic status, these two variables were confounded in the present study, given the sampling procedures. Participants were largely either lower income and black or higher income and white. Thus, the results of this study may not generalize to lower income white families or higher income black families. Relatedly, parental self-efficacy and locus of control were confounded with the different samples, with parents from the Head Start group (i.e., majority lower SES and black) having lower parental self-efficacy and more external locus of control. Although not possible with the present study given the sample size and uneven numbers in groups, future studies could evaluate these models in separate groups – lower income black families and higher income white families to see if the relations operate similarly across groups.

A second limitation is that this study only examined maternal caregivers' perceptions of the variables of interest and did not include reports from other significant individuals in the child's life. On a related note, paternal caregivers' parenting practices and locus of control was not examined. There is evidence that there are differential influences of certain parenting practices used by mothers and fathers on child externalizing behaviors (Gryczkowski et al., 2010). Thus, it may be beneficial for future

studies to examine these constructs in male caregivers and how these relations may differ from that of female caregivers.

A third limitation of this study was that social desirability was not measured. It is likely that caregivers over-reported on characteristics that are found desirable in society (e.g., positive parenting practices) and under-reported characteristics that are found less desirable by society (e.g., negative parenting practices). Thus, it will be beneficial for future studies to include a measure of social desirability to help control for this influence on the actual relations among these variables. Similarly, report from another caregiver or significant figure in the child's life regarding the child's behavior and primary caregiver's parenting practices may also help to control for social desirability.

A fourth limitation of this study was the use of multiple regression imputation to replace missing data. This method of replacing missing data tends to result in random patterns in data being misclassified as important patterns (Tabachnick & Fidell, 2001 as cited in Meyers et al., 2006). However, there was also a very low base rate of missing data that was replaced using this method.

Finally, all of the variables were measured at one time point. Although it is not practical to conduct an experimental design with the variables examined in this study (i.e., temperament cannot be manipulated), a longitudinal design measuring temperament at an initial time point and parenting practices and externalizing behaviors at later time points would help provide further evidence for parenting practices as a potential mediator of the relation between child temperament and child externalizing behaviors. Also, given previous evidence that the relation between child effortful control and certain parenting

practices have a bidirectional relation (Spinrad et al., 2012), it is important to not only examine whether child effortful control is significantly predictive of later parenting practices, but also whether these parenting practices are predictive of later child effortful control.

Given the results of this study, effortful control appears to be an especially important temperamental characteristic to consider when examining locus of control and self-efficacy. Effortful control was in two of the three significant main analyses and also had the strongest bivariate correlations with overall parental locus of control, parents' perceptions of control of child's behavior, and parental self-efficacy. In the present study, the rationale presented was that parents enter the parenting role already with a certain level of self-efficacy or internal locus of control as it relates to parenting. However, given the strong correlations between effortful control and these aspects of locus of control, it may instead be that child effortful control influences or causes a certain degree of internal parental locus of control and/or self-efficacy, which influences parenting practices, which, in turn, influences child externalizing behavior (i.e., serial mediation). Thus, it may be beneficial to examine parental locus of control and parenting practices as serial mediators of the relation between child effortful control and child externalizing behaviors.

Contradictory to hypotheses, extraversion/surgency was not significantly related to negative parenting practices or positive parenting practices. This result may be because the extraversion aspects of the construct (i.e., pleasure from high intensity stimuli and less shyness) masked the influence of the surgency aspects of the construct

(i.e., impulsivity and activity level). Thus, it may be beneficial for future studies to examine these aspects of the factor separately in relation to parenting practices and temperament.

Conclusions

The present study builds on previous literature by examining child temperament, parental locus of control and self-efficacy, parenting practices, and externalizing behaviors in one overall model. Several conclusions can be drawn from the present study. First of all, the results supported an indirect effect of all three aspects of child temperament (i.e., negative affectivity, extraversion/surgency, effortful control) on child externalizing behaviors through negative parenting, providing evidence for negative parenting as a potential mechanism through which child temperament influences child externalizing behaviors. Secondly, it appears that parental self-efficacy and parental internal locus of control are important variables that may attenuate the indirect effect of certain aspects of child temperament on child externalizing behaviors through negative parenting practices. However, whether it was parental self-efficacy or parental internal locus of control that attenuated this indirect effect depended on the dimension of child temperament and the type of parenting practice (i.e., positive, negative) under examination. These results suggest that parents' locus of control may be more important to target when children have a temperament characterized by less effortful control, whereas parental self-efficacy may be important to address when children have a temperament that is characterized by more extraversion/surgency. Results are largely consistent with previous literature on these constructs. It will be valuable for future

studies to examine these relations among variables longitudinally to help provide further evidence for a causal link between child temperament on parenting and parenting on externalizing behaviors, as well as whether parents indeed are entering the parenting role with a certain level of self-efficacy and locus of control.

APPENDIX A – Demographic Form

DEMOGRAPHICS AND BACKGROUND INFORMATION FORM

Directions: These forms are for female caregivers with a child between 3 and 6 years old. You must be at least 18 years old to complete these forms. If your child has been diagnosed with a developmental disability or autism spectrum disorder, please **stop** and notify the researcher. There are no right or wrong answers. Please answer as honestly as possible. If there is an item that you do not wish to answer, you may skip it and move to the next one.

General Information:

Child's Date of Birth: _____ Child's Age: _____

Child's Gender (Circle one): Male Female

Child's Race (Circle one): American Indian/Alaska Native Asian
Black/African American Native Hawaiian/Other Pacific Islander
White Multiracial Other (please explain): _____

Please indicate whether or not your child is Hispanic: Hispanic/Latino _____ Not Hispanic/Latino _____

Child's School: _____

Are you the child's legal guardian or parent? YES NO

Your relation to the child:

_____ Biological parent

_____ Step parent

_____ Adoptive parent

_____ Grandparent

_____ Legal guardian (e.g., foster parent)

_____ Other (please explain): _____

Your Age: _____
Your Gender (circle one): Male Female

INFORMATION ON PRIMARY FEMALE CAREGIVER OF CHILD

If **NO** female caregiver in the home, please circle here: **N/A** (then go to “male caregiver” section)

Age: _____

Relation to child: _____ Biological parent
_____ Step parent
_____ Adoptive parent
_____ Legal guardian
_____ Other (please explain): _____

Current employment: ☐ None, unemployed
☐ None, disabled
☐ Yes, part-time
☐ Yes, full-time

Place of employment:

Occupation/ job position (please be very specific e.g., cashier at a supermarket, high school teacher):

Highest grade completed in school (mark one):

- | | |
|---|--|
| <input type="checkbox"/> 6 th grade or less | <input type="checkbox"/> Some college (at least 1 year) |
| <input type="checkbox"/> Junior high school (7 th , 8 th , 9 th grade) | <input type="checkbox"/> or specialized training |
| <input type="checkbox"/> Some high school (10 th , 11 th grade) | <input type="checkbox"/> Standard college or university graduate |
| <input type="checkbox"/> High school graduate | <input type="checkbox"/> Graduate professional degree
(Master's, Doctorate) |

INFORMATION ON PRIMARY MALE CAREGIVER OF CHILD

If no male caretaker in the home, please circle here: **N/A** (then go to "parental and family status" section)

Age: _____

Relation to child: ☐ Biological parent
☐ Step parent
☐ Adoptive parent
☐ Legal guardian
☐ Other (please explain): _____

Current employment: ☐ None, unemployed
☐ None, disabled
☐ Yes, part-time
☐ Yes, full-time

Place of employment:

Occupation/ job position (please be very specific e.g., cashier at a supermarket, high school teacher):

Highest grade completed in school (mark one):

- | | |
|---|--|
| <input type="checkbox"/> 6 th grade or less | <input type="checkbox"/> Some college (at least 1 year) |
| <input type="checkbox"/> Junior high school (7 th , 8 th , 9 th grade) | <input type="checkbox"/> or specialized training |
| <input type="checkbox"/> Some high school (10 th , 11 th grade) | <input type="checkbox"/> Standard college or university graduate |
| <input type="checkbox"/> High school graduate | <input type="checkbox"/> Graduate professional degree
(Master's, Doctorate) |

PARENTAL AND FAMILY STATUS

Marital status of child's biological parents: ☐ Single (never married)
☐ Currently married
☐ Currently living together (not married)
☐ Separated
☐ Divorced
☐ Widowed

Are you currently: ☐ raising your child alone?
☐ raising your child with a husband/wife, or partner/significant other?
☐ raising your child with the help of family members?

List all people currently living in the household:

Relationship to Child (e.g., mother, sister) Age

_____	_____
_____	_____
_____	_____
_____	_____

Taking into account all sources of income (wages, interest, government assistance, child support, etc.), please estimate the total family income on a yearly basis BEFORE taxes.

(This is for research purposes **ONLY**. No identifying information will be listed with these data)

(Enter corresponding
Number from column
at right) _____

0= Earns no income/dependent on welfare

1=Earns less than \$10,000

2= \$10,000- \$14,999

3= \$15,000- \$ 19,999

4= \$20,000- \$ 24,999

5= \$25,000- \$29,999

6=\$30,000- \$ 34,999

7= \$35,000- \$39,999

8= \$40,000- 49,999

9= \$50,000- \$59,999

10= \$60,000- \$ 74,999

11= \$ 75,000- \$99,999

12= Earns \$100,000 or more

Are you receiving any form of government assistance (e.g. AFCD, SSI)? _____ YES _____ NO

(This is for research purposes **ONLY**. No identifying information will be paired with these data)

Who is the primary wage earner in the family?

____ Mother

____ Father

____ Both equally

____ Other (please explain): _____

Primary language spoken in the home: _____

Other languages spoken in the home: _____

Does your child have an autism spectrum disorder? _____ YES _____ NO

Has your child been diagnosed with a developmental delay? _____ YES _____ NO

If yes, please describe

Has your child ever received services from a counselor or psychologist for behavior problems?

_____ YES _____ NO

If so, have they been diagnosed with: _____ Attention-Deficit/Hyperactivity Disorder
_____ Oppositional Defiant Disorder
_____ Other (please explain): _____

If yes, indicate dates of service: Start Date: _____ End Date: _____

APPENDIX B – IRB Approval Letter



INSTITUTIONAL REVIEW BOARD

118 College Drive #5147 | Hattiesburg, MS 39406-0001

Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional-review-board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
 - The risks to subjects are reasonable in relation to the anticipated benefits.
 - The selection of subjects is equitable.
 - Informed consent is adequate and appropriately documented.
 - Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
 - Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
 - Appropriate additional safeguards have been included to protect vulnerable subjects.
 - Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
 - If approved, the maximum period of approval is limited to twelve months.
- Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 14070202

PROJECT TITLE: Predictors of Parenting Practices and Young Children's Behavior

PROJECT TYPE: New Project

RESEARCHER(S): Sara Jordan

COLLEGE/DIVISION: College of Education and Psychology

DEPARTMENT: Psychology

FUNDING AGENCY/SPONSOR: N/A

IRB COMMITTEE ACTION: Expedited Review Approval

PERIOD OF APPROVAL: 07/16/2014 to 07/15/2015

Lawrence A. Hosman, Ph.D.
Institutional Review Board

APPENDIX C – Parent Informed Consent Form

Title of Research Project: Predictors of Parenting Practices and Young Children's Behavior

Project Director: Sara Jordan, Ph.D.
Department of Psychology
University of Southern Mississippi
(601) 266-4587

Purpose: We, the researchers and The University of Southern Mississippi, invite you, as the primary female caregiver of a three- to six- year old, to participate in a research project regarding potential characteristics and behaviors of you and your young child. The information you provide about yourself and your child will assist in research about the complex relations between child and parent characteristics, parenting strategies and child behaviors.

Procedures: As a participant for this research project, you will be asked to complete a few questionnaires about your own history (i.e., age, ethnicity, annual income), characteristics (e.g., feelings, thoughts) and parenting strategies along with your child's personal information (i.e., age, ethnicity, gender), characteristics, abilities, and behaviors. These questionnaires should take about 30-45 minutes to complete.

Inclusion/Exclusion Criteria: In order to participate in this study, you must be at least 18 years old and must be a primary female caregiver for a child between the ages of 3 to 6 years. Your child must not have been diagnosed with a global developmental delay or autism spectrum disorder. Please do not start this study if you do not meet these criteria.

If you would like more information about the procedures used, or any other questions regarding this research project, please contact Sara Jordan, Ph.D. at (601) 266-4587.

Potential Risks: The risks of your participation are minimal. There is the risk that individuals other than the researchers may be able to view the information you provide if you return the study documents through your child's school or the mail. To help reduce this risk, an envelope is provided in which you can return study documents. Additionally, there is the possibility that you may experience discomfort responding to these questions if you find the information requested to be private. However, you may stop at any time if answering the questions makes you uncomfortable, although participants who do not complete the study may not be eligible to receive a gift card. If you continue to experience distress or are interested in seeking mental health services for yourself or your child, below are the names of local clinics providing services:

The University of Southern Mississippi Psychology Clinic – (601) 266-4588
Pine Belt Mental Healthcare – (601) 544-4641
Pine Grove Behavioral Health – (601) 288-8050

If you do not live in Hattiesburg, Mississippi or the surrounding area you may contact the Project Director listed at the top of the page for referral sources in your area.

Potential Benefits: You will obtain a \$10 gift card to a national retailer (e.g., Walmart) for completing this study. Other personal benefits for participating in this research project are

Voluntary Participation: Participation in this research project is entirely voluntary. You may withdraw from the research project at any time. However, if you withdraw early from the study, it is likely that you will not receive the \$10 gift card.

Confidentiality: Any and all information that is provided will be kept strictly confidential. Any physical data (questionnaire completed by paper-and-pencil packets) obtained will be kept in a locked filing cabinet. Only those who are directly involved in the research project will be given access to the secured filing cabinet. Electronic identifying information will be saved in a separate password protected document that only those who are directly involved in the research project will be given access to. When the data is used in research, no specific or identifying information will be provided that could result in being able to identify your personal responses.

The only time that information will be required to be released about a participant without his or her consent would be for the following reasons: if there is a report of suspicion of abuse to a child, elder, or disabled person or if there is a report that someone is in imminent danger of harming himself/herself or others.

This project has been reviewed by the Human Subjects Protection Review Committee, which ensures that research projects involving human subjects following federal regulations. Any questions or concerns about rights as a research subject should be directed to the chair of the Institutional Review Board, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406, (609) 266-6820.

I HAVE BEEN FULLY INFORMED OF THE ABOVE-DESCRIBED PROCEDURES WITH THEIR POSSIBLE BENEFITS AND RISKS, AND I CONSENT TO MY COMPLETING BRIEF QUESTIONNAIRES.

Signature _____ Date _____

Witness _____ Date _____

APPENDIX D – Tables of Nonsignificant Moderated-Mediation Results

Table A1.

Conditional Indirect Effects of Negative Affectivity on Child Externalizing Behavior through Negative Parenting at Different Levels of Total Parental Locus of Control

Outcome: Child Externalizing Behaviors					
Percentile	Total PLOC	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-22.06	2.59	2.18	-0.70	8.29
25 th	-10.83	3.07	1.60	0.73	7.41
50 th	-2.53	3.42	1.71	0.89	7.96
75 th	8.17	3.88	2.44	0.68	10.74
90 th	21.17	4.43	3.67	0.11	15.10

Table A2.

Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Negative Parenting at Different Levels of Total Parental Locus of Control

Outcome: Child Externalizing Behaviors					
Percentile	Total PLOC	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-22.06	1.27	2.19	-2.62	6.23
25 th	-10.83	2.21	1.66	-0.48	6.40
50 th	-2.53	2.90	1.63	0.26	6.93
75 th	8.17	3.80	2.09	0.49	9.05
90 th	21.17	4.88	3.04	0.20	12.84

Table A3.

Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Negative Parenting at Different Levels of Total Parental Locus of Control

Outcome: Child Externalizing Behaviors					
Percentile	Total PLOC	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-22.06	-1.05	2.28	-5.41	3.73
25 th	-10.83	-0.55	1.88	-4.07	3.49
50 th	-2.53	-0.18	1.89	-3.72	3.94
75 th	8.17	0.29	2.29	-3.91	5.22
90 th	21.17	0.87	3.11	-4.83	7.71

Table A4.

Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Control of Child's Behavior

Outcome: Child Externalizing Behaviors					
Percentile	Parental Control	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-9.09	1.89	1.95	-1.66	6.19
25 th	-5.09	2.39	1.41	0.25	6.02
50 th	-0.09	3.02	1.63	0.64	7.46
75 th	4.72	3.63	2.53	0.21	10.73
90 th	8.91	4.16	3.49	-0.40	14.11

Table A5.

Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Control of Child's Behavior

Outcome: Child Externalizing Behaviors					
Percentile	Parental Control	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-9.09	4.47	2.66	0.40	11.30
25 th	-5.09	3.54	1.94	0.63	8.70
50 th	-0.09	2.37	1.58	-0.24	6.34
75 th	4.72	1.25	2.09	-3.11	5.53
90 th	8.91	0.27	2.90	-6.29	5.73

Table A6.

Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Control of Child's Behavior

Outcome: Child Externalizing Behaviors					
Percentile	Parental Control	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-9.09	-0.47	2.52	-4.95	5.20
25 th	-5.09	-0.70	1.78	-3.98	3.20
50 th	-0.09	-0.98	1.76	-4.45	2.67
75 th	4.72	-1.26	2.67	-6.75	3.99
90 th	8.91	-1.50	3.73	-9.52	5.58

Table A7.

Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Self-efficacy

Outcome: Child Externalizing Behaviors					
Percentile	Parental Self-efficacy	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-6.43	2.12	2.27	-1.52	7.79
25 th	-4.43	2.67	1.82	0.06	7.75
50 th	-2.43	3.22	1.68	0.70	7.72
75 th	1.57	4.32	2.39	0.85	10.31
90 th	6.57	5.69	4.10	0.52	16.91

Table A8.

Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Negative Parenting at Different Levels of Parental Self-efficacy

Outcome: Child Externalizing Behaviors					
Percentile	Parental Self-efficacy	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-6.43	-3.44	2.47	-9.68	0.52
25 th	-4.43	-2.59	2.02	-7.48	0.71
50 th	-2.43	-1.73	1.79	-5.80	1.45
75 th	1.57	-0.03	2.18	-3.79	5.22
90 th	6.57	2.10	3.61	-3.30	11.58

Table A9.

Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Positive Parenting at Different Levels of Total Locus of Control

Outcome: Child Externalizing Behaviors					
Percentile	Total PLOC	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-22.06	-0.37	1.60	-4.59	2.23
25 th	-10.83	-0.43	1.16	-3.37	1.41
50 th	-2.53	-0.48	1.17	-3.40	1.53
75 th	8.17	-0.54	1.59	-4.34	2.27
90 th	21.17	-0.61	2.38	-6.57	3.48

Table A10.

Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Positive Parenting at Different Levels of Total Locus of Control

Outcome: Child Externalizing Behaviors					
Percentile	Total PLOC	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-22.06	0.12	1.51	-2.21	3.87
25 th	-10.83	0.05	0.99	-1.79	2.28
50 th	-2.53	0.01	1.11	-2.41	2.31
75 th	8.17	-0.06	1.76	-4.12	3.25
90 th	21.17	-0.13	2.77	-6.70	4.73

Table A11.

Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Control of Child's Behavior

Outcome: Child Externalizing Behaviors					
Percentile	Parental Control	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-9.09	0.61	1.81	-2.80	4.56
25 th	-5.09	0.09	1.42	-2.88	2.90
50 th	-0.09	-0.56	1.28	-3.55	1.67
75 th	4.72	-1.19	1.59	-5.28	1.28
90 th	8.91	-1.74	2.08	-7.34	1.38

Table A12.

Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Control of Child's Behavior

Outcome: Child Externalizing Behaviors					
Percentile	Parental Control	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-9.09	-0.28	1.76	-4.41	2.89
25 th	-5.09	-0.22	1.27	-3.25	2.08
50 th	-0.09	-0.16	1.30	-3.11	2.30
75 th	4.72	-0.10	1.94	-4.49	3.50
90 th	8.91	-0.04	2.68	-5.98	5.14

Table A13.

Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Control of Child's Behavior

Outcome: Child Externalizing Behaviors					
Percentile	Parental Control	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-9.09	-2.77	2.10	-8.27	0.18
25 th	-5.09	-3.39	2.26	-8.59	0.33
50 th	-0.09	-4.17	2.75	-10.60	0.35
75 th	4.72	-4.92	3.42	-13.34	0.28
90 th	8.91	-5.57	4.07	-16.28	0.15

Table A14.

Conditional Indirect Effects of Child Effortful Control on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Self-efficacy

Outcome: Child Externalizing Behaviors					
Percentile	Parental Self-efficacy	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-6.43	-2.04	1.82	-7.25	0.17
25 th	-4.43	-2.54	1.93	-7.66	0.15
50 th	-2.43	-3.04	2.14	-8.38	0.18
75 th	1.57	-4.04	2.78	-11.07	0.16
90 th	6.57	-5.29	3.79	-15.21	0.08

Table A15.

Conditional Indirect Effects of Child Negative Affectivity on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Self-efficacy

Outcome: Child Externalizing Behaviors					
Percentile	Parental Self-efficacy	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-6.43	-1.20	1.59	-5.88	1.09
25 th	-4.43	-0.94	1.26	-4.37	0.94
50 th	-2.43	-0.69	1.07	-3.32	1.02
75 th	1.57	-0.17	1.32	-3.13	2.39
90 th	6.57	0.47	2.30	-3.87	5.75

Table A16.

Conditional Indirect Effects of Child Extraversion/Surgency on Child Externalizing Behavior through Positive Parenting at Different Levels of Parental Self-efficacy

Outcome: Child Externalizing Behaviors					
Percentile	Parental Self-efficacy	<i>B</i>	<i>SE</i>	Lower CI	Upper CI
10 th	-6.43	0.48	1.58	-1.69	4.93
25 th	-4.43	0.52	1.23	-1.14	3.91
50 th	-2.43	0.56	1.07	-1.00	3.45
75 th	1.57	0.64	1.51	-2.05	4.23
90 th	6.57	0.74	2.68	-4.81	6.25

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